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THE UNIVERSITY OF ALBERTA

VARIABLES RELATED TO HIGH SCHOOL ACHIEVEMENT

BY

TERRENCE SEAN SULLIVAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN

PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL 1987

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ABSTRACT

The purpose of this study was to determine which variables were significantly related to the retention of students in grades ten to twelve. A stratified random sample of 48 graduates and 42 dropouts was selected from a Nova Scotia school district. Data were collected by means of a 59 item questionnaire on the student's home environment, personal characteristics, academic performance and school life experiences. In addition, information was obtained from cumulative records and through semistructured interviews with 17 of the respondents. The variables which were derived from the literature were grouped for comparison by each of the three major stages of an input-process-output model. Data were analyzed using the chi square test of significance for all discrete variables and the two tailed t -test for all continuous variables.

The study findings on the input comparisons showed that mother's education level, parent attendance at parent teacher meetings and the indicators for the nature of the parent student relationship were related to graduating and dropping out. Also a student's future expectations and lifestyle were strongly related to high school completion. In addition a number of specific indicators of student values and use of free time were found to be related to graduating and dropping out. The qualitative material revealed that the relationship between the home environment and retention was stronger than was indicated by the quantitative findings.

The findings on the process comparisons showed that the graduates were conditioned by success which made their school experiences more pleasant. Conversely the dropouts were conditioned by failure which resulted in a process of alienation, negative attitudes, poor attendance, and lateness which culminated in their dropping out. The environmental comparisons showed that there were differences in the extent of the influence of specific variables as a result of the suburban/rural nature of the environment.

This study also showed that graduating and dropping out was a process that occurred over a period of time. This process was related to the unique interaction in each student of a number of positive and negative influences coming from the home, the school, and the environment.

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One could not reach this level of study without the support and assistance of others.

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Chapter 1

Overview and Purpose of The Study

Introduction

Student Achievement and the variables that influence it are topics that have received considerable attention in the United States over the past three decades. Studies on correlates of student achievement referred to in the literature as Education Production Function Studies or Input-Output Studies evolved largely as a result of the civil rights movement in the United States and the desire to provide equal educational opportunity for all. Researchers were especially interested in finding what variables could be manipulated to improve the overall educational performance of minorities which would result in their having an equal opportunity to their share of the good life. With relatively few exceptions there has been little interest or need to replicate this type of study in Canada. However recent events, especially the changes to the Canadian Constitution, have made input-output studies more important and relevant to the Canadian context.

These studies seem to be based on a premise that the primary objective of school administrators, in a democratic society, must be to ensure that the students in their care reach their full potential. In this regard the following assertions made by the U.S. National Commission on Excellence in Education (1983:7) would seem to be applicable to Canada:

> Learning is the indispensable investment required for success in the 'information age' we are entering. ... A high level of shared education is essential to a free democratic society and to the fostering of a common culture, especially in a country that prides itself on pluralism and individual freedom.

To be able to carry out that responsibility, educators need to know which influences affect student achievement significantly and how these various influences interact to determine educational outcomes.

In the present study the relationships between educational outcomes and a number of variables were examined in a distinctly Canadian context while using a definition of achievement which was different from that used in major American studies. In this study achievement was defined in terms of high school completion unlike the American studies in which achievement was defined in terms of standardized achievement tests. Various facets were selected from the literature and their relationships with high school completion were examined in an attempt to find out which ones were most significantly related to high school completion.

Data collection was done in a selected Nova Scotia school district. This district contains students from grades kindergarten to twelve who live in various communities. The population of the area comes from densely populated suburban areas and sparsely populated rural areas and represents various socioeconomic levels, ethnic and religious groups. Because the students, who were all in the same district, came from both a variety of family circumstances and community environments a unique opportunity was provided for making comparisons which would help to uncover some of the different influences related to student achievement.

Purpose of the Study

The purpose of this study was to examine the influences which were most significantly related to the educational achievement of students in grades ten to twelve.

Student achievement in this study was defined in terms of high school completion. Students were considered to have achieved if they had attained the Nova Scotia Senior High School Diploma and they were considered to be unsuccessful if they left high school before doing so. A number of questions had to be answered to be able to discover what influences were most significantly related to the achievement of both groups. These became the main questions for the study.

(1) What are the significant differences in input variables between

graduates and dropouts?

(2) What are the significant differences in process variables between graduates and dropouts?

(3) What are the significant differences in input variables between graduates and dropouts in rural and suburban settings?

(4) What are the significant differences in process variables between graduates and dropouts in rural and suburban settings?

(5) What are the best descriptors of students who attained their high school diploma?

(6) What are the best descriptors of students who dropped out?

This type of study is referred to in the literature as an input-output analysis or an education production function study. The theory underlying such studies is that a student's academic achievement will depend on his or her internal school experiences and certain personal and environmental characteristics. This study built on that theory by attempting to determine whether or not the importance of selected variables obtained from the literature review varied from student to student and from group to group.

History and Rationale

For the past three decades there have been successive studies to determine the variables that affect student achievement. These studies have often been referred to as education production function studies. According to Benson (1981:189) the education production function study is a type of study which attempts to relate inputs in the education process to outputs. The outputs are some measure of student achievement, usually standardized achievement tests.

It was not until 1966 with the release of the Coleman report (EEOR) in the United States, and the controversy it generated, that these studies started to attract significant attention. Coleman (1966) found that, (1) family background was the most important factor in determining pupil achievement, (2) the impact on achievement from the things schools controlled was barely significant and, (3) that in schools the nature of the student

body was more important in affecting achievement than anything the schools did.

These major controversial conclusions of the Coleman study have caused its methods and findings to be debated to the present day. What was especially important besides the findings was that it changed the focus of studies dealing with educational quality. According to Mosteller and Moynihan (1972:27),

> the EEOR is pathbreaking, a watershed. Henceforth no study of the quality of education or the equality of educational opportunity can hope to be taken seriously unless it deals with educational achievement or other accomplishment as the principal measure of educational quality.

The Coleman report therefore shifted the emphasis from inputs to outputs. This did not mean that inputs would cease to be important. But henceforth they should be considered along with outputs and the outputs should be the measure of quality in education. It was the EEOR that brought this transformation. Data from it have been analyzed and reanalyzed, and different theories have resulted. EEOR may have led to the effective schools movement which seems to have been a direct response to the conclusion that the influence of schools on the achievement of students was almost negligible.

Richards (1986:12) pointed out that there have been a number of studies since Coleman, some of which contradict his findings (Smith:1968) and others (Hanushek:1972), (Thomas:1982) and (Levin:1970) which confirmed them. Regardless, it was probably the sheer size of the Coleman sample, over 600,000 students, that led to its having such a great influence. Its findings influenced court decisions in the United States which in turn led to bitter controversy over busing policies in its northern cities and had an indirect effect in Canada as well.

Despite the controversy it has evoked, one of the main benefits of the EEOR is the research it has precipitated. It provoked numerous efforts to uncover the complex relationships between family, school, community and educational outcomes. The study that follows was an attempt to add to the knowledge in this area.

Significance of the Study

Theoretical Significance

According to Glasman and Biniaminov (1981:505) in their literature review, "attempts have intensified in recent years to identify school inputs which have proven to be significant determinants of school outputs." It was notable in examining their material that all the major studies from Goodman (1959) to Wolf (1977) were done in the United States. Also with very few exceptions the measure of achievement has been a standardized achievement test. A more recent review of ERIC (1986) indicated little change in this pattern.

Researchers Griliches and Mason (1972) found that the length of schooling supported differences in income and that ability made a relatively small contribution to differences in income. Their study showed that an additional year of schooling would add about 4.6% to income while a 10% increase in an ability test score would add about 1% to income. They argued that the direct and indirect effects of heredity on income are relatively minute. This relationship between the length of schooling and income is supported by researchers like Weisrod (1963), Schultz (1971), Schultz (1980), Sewell (1975), Johnson (1973), Fagerlind (1975), Morgenstern (1973), Ribich (1975) and others who have tied income to the level and quality of education achieved.

Given the established relationship between years of schooling and income the question of what influences affect student achievement becomes more critical when the number of students in Canada who are dropping out are considered. Forget (1985:3) observed that 37% of Canadian eighteen year olds have not graduated from high school. Considering as he does that the unemployment rate for these students is 72% higher than for those who received their high school diploma or trade school certificate, dropouts could place a substantial burden on national and local social services over their life time. In addition when one considers the statistics on dropouts coterminously with the

predictions by some demographers (Justiz and Kameen:1986) of impending labor shortages, it is clear that Canada must find methods to deal with this waste of human resources.

Unlike the American studies in which achievement tests were used as the predominant measure of output this study had a Canadian basis and used a different determinant of achievement. Achievement in this study was related to years of schooling because years of schooling were related to income. The study was an attempt to determine how various input, process, and environmental variables were related to continuation decisions of senior high school students by comparing the differences between the students who graduated and those who dropped out.

Practical Significance

In the United States most of the studies have been initiated to determine means of improving educational quality for the poor and for minorities. Many followed in the wake of controversial Supreme Court decisions. Some like that of Coleman (1966), helped to precipitate those decisions. If we accept that much of what occurs in a school is determined by the environment in which it operates, there are some significant issues for Canadian educators to consider.

For example, Canada has traditionally not had a history of legal intervention in educational matters. According to A. Wayne MacKay (1984:29), an expert in Canadian education law,

> Historically, courts have not played a significant role in Canadian education. ... There have been court cases regarding the powers of school boards, teacher negligence, and corporal punishment, but even these are not numerous.

MacKay asserted this is about to change. When, in 1985, the new Charter of Rights and Freedoms came into effect in Canada, the legal framework changed in which Canadian educators operate. Again according to MacKay (1984:309),

> Equality rights offer the greatest potential for changing the present operation of schools. Section 15 of the Charter may become a tool for attacking age discrimination statutes, regulations, school board rules, and regular school policy.

When referring to these equality rights and to the American experience, MacKay stated, "it is likely that Canadian courts look to U.S. decisions." Judith Anderson (1984:181) seems to agree to some extent when she writes,

> The American approach may lend itself very well for adoption by Canadian courts. The administrative detail or regulations would be formulated by school authorities and courts would set the broad policies and review the regulations on a "good faith" test. This clear separation of function allows the past "reasonableness" common law doctrine to be maintained as a review test for the lower levels of decision or policy-making. Courts would use their new judicial policy-making, constitutional authority for formulating broad policy principles.

Sussel and Manley-Casimir (1986:319) observed that in its first case involving the Charter, in a unanimous ruling written by Justice Willard Estey, "the court drew on U.S. precedent to outline its future approach to constitutional interpretation" when it was stated (1984:1),

> the courts in the United States have almost 200 years of experience at this task and it is of more than passing interest to those concerned with these new developments in Canada to study the experience of the United States court.

They argued further that it is very likely that Canada will look to U.S. constitutional law to help resolve Canadian constitutional questions dealing with education. Canadian justices, they asserted, are going to have to decide what phrases like (1986:328) "equal before and under the law and equal benefit and protection of the law" mean when applied to education.

According to Mackay (1986:294) there are three ways of defining equality in s.15: "non discrimination, equal opportunity, and equal outcomes." He stated (1986:295), "in addition to non-discrimination, there is broad support for the view that s.15 guarantees equality of opportunity to all Canadians" (Lepolsky, 1984). This he believes means that judges could order programs established to ensure provisions of the charter, such as equality of opportunity, would be upheld. He argued that an interpretation of equality

which puts the emphasis on equal outcomes (1986:296), "would require empirical data to assess whether particular laws and policies have disparate impact on particular groups or individuals in society."

Before the Charter, education was clearly a provincial responsibility. The Charter provides the means for the Federal Courts to play a more interventionist role in educational matters. What is important about the Charter is that it is a constitutional document and as such is the supreme law of the land. Since it became law any school board action is subject to its application. Again according to Anderson (1984:240),

> Whether school officials are acting as governmental officials will be determined according to the function performed and will not automatically follow from their positions within the school organization. It is the function that is the determining factor and not the title or position held.

Sussel and Manley (1986:329) also asserted that a more activist or interventionist role by the Supreme Court in educational matters will cause the charter to be an instrument of "increasingly centralized or national educational policy." These remarks are made more significant when the arguments of Ray (1986) are considered. He asserted(1986:354) that if "income and employment are not uniformly distributed; how can it be otherwise for educational opportunities."

When considering the question of whether poverty hinders educational opportunity Ray wrote (1986:355),

> even if poverty does not constitute an absolute barrier, there is no doubt that it is a factor in school drop-outs, under-achievement, and low aspirations (Adams, Cameron, Hill & Pentz,1971) and in self selection and streaming within the schools (Hunter, 1982, Porter, 1979, Porter, Porter, and Blishen, 1982).

He asserts that the obligation of the federal government to provide enough revenues to ensure that provincial governments provide reasonably comparable levels of public services is now an entrenched right as a result of the Canada Act (1981).

The American judiciary has shown a ready willingness to get involved especially in matters dealing with equal educational opportunity. Most of these cases have been related

to race. In Canada we do not have a recent history of segregation by race in our schools but the segregation that occurs is a consequence of socioeconomic status especially in the urban areas. Researchers like Perl (1973) claim that different conclusions are reached when the basis of a study is socioeconomic status as opposed to race. This condition of segregation according to socioeconomic status would seem to be growing in importance in Canada, given the American experience. In the United States there has been a ready willingness on the part of the courts to intervene if citizens were being deprived of equal educational opportunity as a result of their place of residence. Such legal challenges are now possible in Canada.

According to Gayler (1984) litigation is continuing to grow in the United States and educational litigation is growing at a faster rate than the overall caseload. The way would seem now to be cleared for Canadian courts to play a more activist function in educational matters. The extent to which they intervene will depend to a great degree on the actions of educators. According to Mackay (1986:310),

> if there is a danger of introducing too much legalism into education, the best way to avoid it is for educators to attempt to put their own houses in order. If school boards, school administrators and teachers evolve a plan for implementing equality in the schools, the courts are less likely to interfere.

This not only implies that educators must know more about the charter and its implications for education but they must have a better knowledge of the ways to correct inequality. The Charter has moved the Canadian framework for education much closer to the American circumstance and in so doing has made topics like equal educational opportunity more immediate for Canadian educators. Thus, the time when they will need more information about how inputs relate to outputs in a distinctly Canadian context seems imminent.

In addition to the legal arguments, there are economic and societal issues which are increasing the demands for the kinds of information generated by this type of study. The announced intention by the Federal Government to bring down the size of the deficit has

launched an era of restraint at all levels of the public sector. Educators must have better knowledge of how inputs are related to outputs to be able to maximize results within the new financial realities. Also, major changes have occurred in the family and in society generally over the last two decades. According to Scott-Jones (1984:259) in her discussion of significant input variables,

> studies of the family's influence are especially timely because families are undergoing change, such as the increased number of one parent families, the increased participation of fathers in child rearing and the increased participation of mothers in the work force.

The extent of this change can be observed by looking at American census figures. LeGault (1985) writes that,

> According to the Bureau of Census, over 12 million, or 20% of children under 18 live with one parent, usually the mother. Bureau demographers predict that within the decade or so nearly one fourth of all American children will be living with one parent and nearly half will have lived in a single parent family for at least several months.

Hofferth (1987) argues that schools today face educating children with many potential problems which result from societal changes. Recent demographic trends in the United States such as divorce rates, teen pregnancies and women's employment were examined. The author states (1987:82),

> Researchers have found that parental divorce reduces the child's school achievement, chances of high school graduation and completed years of schooling, and increases the probability of early sex, childbearing and marriage. ... Boys seem to be affected more strongly than girls, and the effects last longer. There is evidence that some effects of parental divorce on children decline or disappear after a year or two (Hetherington et al. 1983) However, a growing body of research suggests substantial long-term effects of experiencing a divorce or separation on the child's later economic well being (McLanahan 1985, 1986).

The author also asserts that the research shows that mother's employment per se has no effect on children but increasing numbers of children are at risk physically and mentally because of the absence of parents during the day and physical exhaustion at night. In addition complicated family arrangements make it difficult to know who is responsible for the children.

According to the Institute For Educational Leadership (1986:21),

> In 1955, 60 percent of households in the United States consisted of a working father, a housewife mother, and two or more school-age children. In 1980, that family unit was only 11 percent of our homes, and in 1985 it is 7 percent. Of every 100 children born today, twelve will be born out of wedlock and 6 will be born to teenage mothers, forty will be born to parents who divorce before the child is 18, five will be born to parents who separate, two will be born to parents of whom one will die before the child reaches 18, forty-one will reach 18 "normally."

In this study an attempt was made to determine how these changes in economic, demographic, and societal inputs are related to the achievement of students. Such information would be useful in planning interventions to reduce the number of high school dropouts.

Summary

A study of the variables that are related to student achievement as it is defined in this study was important for a number of reasons. Among them are the rapid changes in society, the established relationship between years of schooling and income, the changing legal framework for Canadian education, the changing demographics, the decline in resources, and the scarcity of this type of study being undertaken in a distinctly Canadian context.

Definitions, Limitations and Delimitations

Definitions

Student Achievement A student who graduated from high school in a selected Nova Scotia school district.

Personal Characteristics Independent variables directly attributable to the personal development of the student.

Cumulative Record Card A standardized file used to record academic and personal information on each student.

Graduate A student who attains the Nova Scotia Senior High School Diploma.

Dropout A student who leaves school prior to attaining the Nova Scotia Senior High School Diploma.

Retention The tendency for students to remain in school until they graduate from high school.

At Risk Student A student who displays characteristics common to the dropout but who has not yet left school.

Sample The grades 10-12 students of a selected Nova Scotia School District who attended high school in that jurisdiction during the 1985-86 school year and who were selected for this study.

Input Variables Those influences the student brings to school as a result of his/her home environment and personal characteristics.

Process Variables Those influences that come from within the school.

Environmental Variables Those influences that are related to the student living in a rural or suburban environment.

Outputs The result of the interaction of the inputs, process and environment which in this study result in either graduates or dropouts.

Limitations

It is assumed in education production function studies that all relationships between independent and dependent variables are linear relationships. This may not always be the case.

A second weakness of this study is multicollinearity. It continues to be a weakness of all studies of this type. There is no known statistical technique to deal satisfactorily with the problem. Some techniques may help to reduce the problem of redundancy but the very complexity of each individual makes it impossible to separate completely the influence of one variable from that of another.

A third weakness may occur because the sample is not a truly random sample. For example, if a factor like income was a major influence on achievement and the sample did not reflect the income distribution of the student population, then the conclusions of the study would be limited.

Another problem area in education production functions is the aggregation of data. According to Lau (1979) "use of aggregate data on either the output or the input side

tends, in general, to obscure relationships even where they exist."

Delimitations

The study was concerned only with those students who attended regular high school programs in a selected Nova Scotia school district during the 1985-86 school year. It was anticipated that the practical implications will be relevant to this district only but the theoretical implications will have a wider importance.

Information was obtained from standard files, a questionnaire administered to each student and a forty-five minute personal interview with a representative sample of the larger groups. There were no follow-up interviews. The interviews were semi-structured and both the interview format and the questionnaire were pilot tested in Alberta prior to the data collection in Nova Scotia. The questions for the interviews and questionnaire were developed in relation to the information needed to complete the individual variable categories for each student. They were also grounded in the literature review.

Chapter II

Review Of The Related Literature

The general purposes of the literature review were to determine what similar studies had been done in the past, to examine the rationale behind each, to look at the list of variables used, to examine the conclusions reached, to become familiar with the strengths and weaknesses of such studies and to help establish a conceptual framework for the present study.

In addition the following specific questions were addressed; (1) What is the most appropriate measure of educational achievement? (2) Which variables are most significant in affecting educational achievement? (3) What are the input variables that affect educational achievement? (4) What are the process variables that affect educational achievement? (5) What are the environmental variables that affect educational achievement?

Conceptual Framework

One of the major difficulties in undertaking research in the social sciences and, in particular, in a field like educational administration, is to determine a focus for the study and to maintain that focus throughout. In a field where so many variables are interrelated it is difficult to determine a proper basis for the consideration of variables, which variables to consider, and what the boundaries of the study should be. A conceptual framework will help do that. According to Campbell and Mazzoni (1976:5),

> the conceptual framework, then, offers a vantage point from which to view the subject criteria for judging what information is relevant to its study and a device for organizing the data that are gathered.

For the purpose of this study the public education system was viewed from an organizational perspective.

General Systems Theory

According to Scott (1981:21-23), there are three perspectives from which to consider organizations.

> An organization is a collectivity oriented to the pursuit of relatively specific goals and exhibiting a relatively highly normalized social structure. (Rational)
>
> An organization is a collectivity whose participants are little affected by the formal structure or official goals but who share a common interest in the survival of the system and who engage in collective activities, informally structured,to secure this end. (Natural)
>
> An organization is a coalition of shifting interest groups that develop goals by negotiation; the structure of the coalition, its activities, and its outcomes are strongly influenced by environmental factors. (Open System)

In education, the goals are often difficult to define but there can be little doubt that the participants in educational organizations are striving to obtain a loosely defined outcome often referred to as student achievement. There is also a general acceptance that the majority of the influences that affect student outcomes come from the environment outside the school. It is, therefore, relatively easy to see why schools are usually considered from the open systems perspective.

Bertalanffy (1972:417) in Steers (1977:10) defines an open system as "a set of elements standing in interrelation among themselves and with the environment." As shown in Figure 2.1 an open system has three basic components: inputs, throughputs (process), and outputs.

The inputs in this type of model would be all those influences that come to the organization from the environment. They are then acted upon by a process within the organization to produce outputs which are then returned to the environment.

Katz and Kahn (1966:19-25) describe nine characteristics which are common to all open systems.

1. Importation of energy (inputs) from the external environment.
2. Transformation of energy (throughputs) by means of work activities.
3. Exportation of transformed energy (outputs) to the external environment.

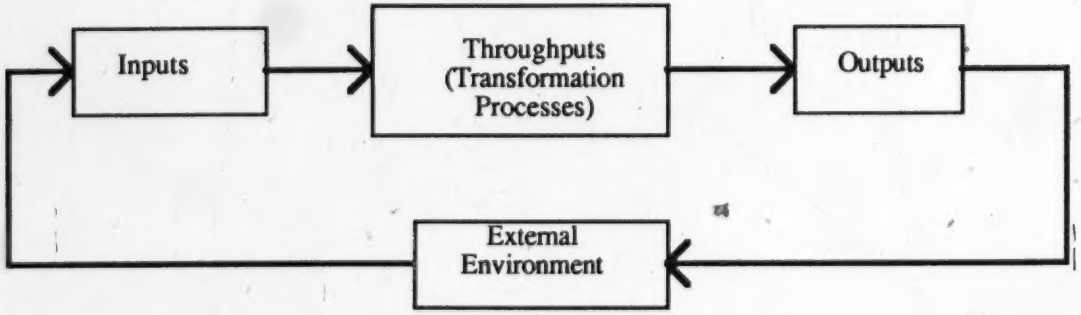

Figure 2.1 An Open System

Adapted from Steers, Richard M.
1977 Organizational Effectiveness: A Behavioral View.
Santa Monica, Cal.: Goodyear.

4. Cyclic character of the transformation process. Throughput activities produce outputs that, in turn, ultimately become new sources of inputs.
5. Negative entropy. Organizations import more energy than they export. That is, systems use energy in the transformation process and store energy for future needs.
6. Information control mechanisms. Systems receive information from the environment, employ coding procedures that screen out certain information, and receive feedback from the environment in response to system activities.
7. Steady state behavior. Systems tend to maintain, or attempt to maintain, their basic character by controlling or neutralizing threatening external forces for change. (That is, dynamic homeostasis)
8. Role differentiation and specialization. As systems grow, there is an increasing tendency to ward the elaboration of role and specification of function.
9. Equifinality. Systems can often reach the same ends by different means. This notion emphasizes the flexibility and adaptability inherent in most open systems.

In the present study, this open system framework was considered in relation to the effect these variables had on individual students. The purpose of the study in terms of an open systems perspective was to define the outputs and then work backward through the process and the inputs to determine which variables were most influential in affecting outputs. The study touched on all those characteristics considered important by Katz and Kahn but placed greater emphasis on some over others. Inputs, throughputs (process), outputs and the environment were emphasized as was the concept of equifinality. The idea that different students could be influenced in different ways by the same variables had some interesting theoretical implications.

Input - Output Studies

From the early part of this century educational researchers (Young:1927), (Goodrich & Clements:1923), (May:1923), (Maller:1932) have been curious about why some students are successful while others are not. However it was not until the 1950's and the advent of the civil rights movement in the United States that interest in this question really started to gather momentum. The publishing of the report on Equal

Educational Opportunity (1966) and the controversy that it evoked led to a series of studies that continue to the present day. These studies became known as input-output studies or education production function studies. As has been previously stated the theory underlying such studies is that a student's academic achievement will depend on his/her internal school experiences and certain personal and environmental characteristics.

Inputs

When students come to school they bring with them various attitudes and characteristics that will affect their ability to achieve or reach the appropriate level of output. These attitudes and characteristics interact with the school environment to produce the educational output. A list of these characteristics acquired through the literature review is listed in Appendix 2. For the purposes of the present study they were considered under two broad headings, Home Environment and Student Characteristics.

Home Environment

Hanushek (1979) asserts that past educational production function studies have been limited by a lack of conceptual clarity and a number of analytical problems. As a result, he believes that there is considerable confusion about what has been learned. He states (1979:376-379) that relatively few conclusions can be drawn with certainty as a result of studies concerning student achievement. However, one of those conclusions is that "differences in family background lead to significant achievement differences."

Winkler (1975) asserts that socioeconomic status of the student population affects educational achievement in two ways. First, teachers have to spend more time disciplining students from low SES homes which means they have less time to spend on instruction. Second, peer groups as well as parents and teachers reward students for certain kinds of behavior. A high proportion of low socioeconomic peers who do not tend to value educational achievement highly can influence individual students to adopt

attitudes and behavior which are detrimental to their learning.

Jencks (1975) argues that reforming the schools will do little to bring about social change because huge changes in the schools will bring about very small social effects. He found that schools did not contribute to cognitive inequality but both genetic and environmental inequality did. He asserts that there also seemed to be a multiplier effect which caused those who started out with genetic advantages to get environmental advantages as well.

Jencks submits (1975:255) three reasons why schools cannot make adults more equal,

> first children seemed to be far more influenced by what happens at home than by what happens in school. They may also be more influenced by what happens on the streets and by what they see on television. Second, reformers have little control over those aspects of school life that affect children. Reallocating resources, reassigning pupils, and rewriting the curriculum seldom change the way teachers and students actually treat each other minute by minute. Third, even when a school exerts an unusual influence on children, the resulting changes are not likely to persist into adulthood.

Rock et al. (1985:6) find the following relationships between family support variables and achievement: (1) mother's educational aspirations had a positive effect on vocabulary, mathematics and writing, (2) out of school travel, trips to museums etc. had a small positive relationship to gains in vocabulary and science, and (3) the family educational support variables had an indirect impact on gains 'working through' student school behaviors which in turn had a direct effect on gains.

Bidwell and Kasarda (1980:406) believe that the failure to concentrate on the distribution of resources at the school level has biased the results of many school studies by overemphasizing some variables. For example, socioeconomic background is often inflated because it is considered individually and then again as a school input received by each student.

Sampson-Malone (1985) concentrates on identifying the aspects of socioeconomic status and family culture that influence achievement and analyzing the differential effects

of these influences on black and white student performance. Socioeconomic characteristics examined were mother's educational level, father's educational level, father's occupation, family income, and home ownership. Measures of family culture examined were parent's educational aspirations for children, parent's self esteem, parent's locus of control, parent's social participation, and parent's reading habits. The effects of student status and behavioral characteristics were also investigated. Family culture was defined (1985:16) as "a world view adhered to by members of the family." She found that different aspects of socioeconomic status and family culture influence the achievement of black and white students. Also racial segregation in their schools tended to represent class segregation and both have been found to decrease educational achievement. In a high socioeconomic area self concept is important for achievement. In low socioeconomic areas sense of control is related to achievement.

Jorgenson (1979) in Sampson-Malone states that,

> internal control is fostered by parental socialization which insures that they consistently receive valuable rewards (warmth, nurturance, approval and acceptance with little hostility, rejection, or withdrawal) and punishment that is consistent but not authoritarian.

The following four propositions by Sampson-Malone are generally supported: (1) academic achievement is influenced by socioeconomic status, (2) academic achievement is influenced by family culture, (3) academic achievement is influenced by student characteristics, and (4) academic achievement is influenced by race.

In addition she found that the number of suspensions was the only student characteristic that predicted achievement for the whole group. There was a negative correlation between suspensions and achievement for all students. Mother's education was the strongest predictor of achievement for blacks and father's education was the strongest predictor for whites. White student achievement appears to be more influenced by income related factors than is black student achievement.

Harbin-Kemp (1983) seeks to determine if parental involvement is more

significantly related to student achievement than a student's family background. She states (1983:4),

> with few exceptions the research indicates that educational level of parents, one versus two parent families, socioeconomic level and size of families are all correlated to the academic achievement of the child.

She found the following: (1) there is a significant relationship between grades and parental involvement, (2) parental involvement was not the most significant variable related to grades compared to other family background variables, (3) ability was most significantly related to grades and (4) certain family background variables are better predictors of grades than is parental involvement. Father's education and length of time in the area were the most significant family background variables. She agrees with Mayeske (1973) when she says (1983:2) "that the crucial factor in achievement was not so much the presence or absence of parents or parental surrogates as the nature of their involvement in the educational process."

Clarke (1983) studied ten urban black families in Chicago to try and determine how family background contributed to student achievement. The families studied were lower socioeconomic status but from four distinct groups. They were (1) two-parent families with one high achieving twelfth grader (2) one-parent families with at least one high achieving twelfth grader (3) two-parent families with at least one low achieving twelfth grader and (4) one parent families with at least one low achieving twelfth grader. Data were collected by participant observation, by semistructured tape recorded interview and by questionnaire.

As a result of the study he developed the following hypotheses: (1) early success in school is important for continued academic progress, (2) student's attitude towards higher education is important for success in high school, (3) students are likely to be academically successful if their parents are involved in the school, (4) regular attendance is important, (5) a student should have a sense of urgency in school pursuits, (6) parent's perception of their ability to cope is very important, (7) students who have a positive view

of themselves, are reasonably autonomous, independent, assertive and highly structured will do better in school, (8) parents have to see their role in the child's education as being important, (9) parents have to have certain expectations for home behavior, (10) parental power in the home cannot be too high or too low, (11) student's sentiment towards parents is important, (12) the clarity of role boundaries is important for the student's ability to interact with non family members, (13) the degree and quality of sibling interaction is important, (14) parent's influence over the student's use of time and space is important, (15) the extent of a student's ability to perform household chores is important, (16) regular discussion on school issues is positively correlated with academic achievement, (17) the teaching style of the parents is important, (18) the extent to which the student does homework is important, (19) the degree and quality of parental involvement in home social activities is positively correlated with academic achievement, and (20) a supportive relationship of parent to student is important.

Marjoribanks and Walberg (1976) examine the relationship between socialization processes in the family and the effect on the cognitive and affective behavior of adolescents. They used Bidwell's (1972, 1973) two aspects of socialization, technical socialization "which involves developing intellective and motor skills and learning items of information and thought that organize them" and moral socialization "which is related to the firmness with which a person holds a belief value or attitude."

The data were collected from a national survey in England in 1967 and then as a follow-up study on the same group of students four years later in 1971. The final sample included 396 girls and 383 boys who were in their fourth year of secondary school.

The socialization processes of the family were defined (1976:337) in terms of,

> father occupation, family income, father education, family size, birth order, physical amenities of the home, parents' aspirations, literacy of the home, parents' interest and support, the early reading achievement of the adolescent, and six measures of adolescent behavior: nonverbal intelligence, English achievement, arithmetic achievement, educational and occupational aspirations, attitudes toward school and self-esteem.

They found that the family socialization processes have a differential effect on the cognitive and affective behaviors of adolescents. Canonical correlation was used to gain a more enriched understanding of the relationships. The canonical variates revealed that for girls the cognitive and affective behavior are related differentially to socialization processes. For girls (1976:337),

> English achievement is related strongly to reading performance literacy of the home, and the social status of the family while arithmetic achievement and to a lesser extent, nonverbal intelligence are associated with parent's aspirations and the social status of the family. Parent's aspirations, social status of the family and literacy of the home are related strongly to a girl's educational and occupational aspirations and to a lesser extent, associated with the self-esteem and school attitude scores.

The researchers believe that these findings lend support to their proposition that the technical and moral satisfaction processes are interdependent. For the boys (1976:341),

> English and arithmetic achievement, aspirations and, to a lesser extent, nonverbal intelligence, school attitudes and self-esteem are related to the proxy socialization index of reading performance, parent's aspirations and literacy of the home. Unlike the relations for girls, the social status(father occupation, family income, father education) of a boy's family was not a significant predictor of the behavior variables.

The findings show that there is a moderate to large relationship between socialization processes in the family and the cognitive and affective behaviors of adolescents. The proximal socialization indices have greater predicative validities over the structural variables. However, they argue that social structure variables should be included especially in determining the relationships for girls which tend to be more complex.

The Alberta Minister's Advisory Committee on Student Achievement (1979) commissioned two literature reviews on student achievement. It found that some studies showed that achievement was positively related to family income, living with both parents, use of books in the home, teacher's salaries, library facilities at school, teacher satisfaction and teacher expectations. It also showed that achievement is negatively related to housing density, family size, juvenile delinquency and a lack of library

services. Attendance, expenditure per pupil and class size are shown to be not related or ambiguously related to achievement. Also students' attitudes are positively related to the parents' attitudes towards education and teacher satisfaction with students, and negatively related to drug usage, part time work and class size.

Shanahan and Walberg (1985) reanalyze the data from the High School and Beyond Survey to study the determinants of high school achievement. They refer (1985:357) to their previous study (1983) in which they found the amount of discussion between parents and children on educational matters was significantly related to achievement. Other background factors that proved to be important were amount of homework completed, locus of control, study time and amount of television viewing. The study confirmed the results of previous studies. Homework and parental involvement were significantly related to achievement. The negative effects of excessive television viewing were also confirmed.

Porter, Porter and Blishen (1982) examine the effects of students' backgrounds on their aspirations for higher education. They surveyed 9,000 students in Ontario who were in grades eight, ten, and twelve in 1971 along with 3,000 parents. A follow-up study of the grade twelves was done in 1973 and the grade eight students in 1976. They argue that school performance was not strongly related to social class. The social class of the parents affect their educational aspirations, the student's self concept of ability and the type of program he/she decides to enroll in. All of these factors in turn have an effect on the educational aspirations of the student. They also found that the lower Socioeconomic class has a large number of high ability children. In addition they assert that their study shows that boys had a higher self-concept than girls.

Richmond (1986) conducted a study in metropolitan Toronto which was an analysis of the influence on educational achievement and intergenerational mobility of demographic, socioeconomic and socio-psychological factors. Multiple regression was used to determine which influences were most significant in affecting educational

achievement. Separate analyses were done for men and women. Six ethnogenerational categories were used in the selection of respondents which were based on the birth place of the parents and the respondents. He found that for males the influences of parents education, number of siblings, parental encouragement and the students ambition were all in the direction predicted and were highly significant. He states (1986:83),

> measured by the standardized regression coefficients, occupational ambition showed the strongest association with actual years of education (0.34), followed by father's education (0.22), mother's education (0.16) and number of siblings (0.11) in that order. The positive effect of being in the second generation "other" category, and the negative effect of being Catholic, persisted but their effects were much smaller.

The results for women were similar to those for the men with the exception of mother's education level and number of siblings. These two variables were more influential for women compared to men while encouragement of parents and occupational ambition had less effect for women.

The findings of the study challenged the assertions of Porter (1965) that non-British ancestry would be an obstacle to upward mobility in Canada and that it was also a cause of inequality of educational opportunity. The findings show that Canadian children of foreign born parents did very well educationally and equalled or surpassed the children of British or American ancestry.

Student Characteristics

Jencks (1975) asserts that school life should be looked upon as an end in itself. He argues that his research proves that the output of a school depends on the characteristics of the children entering it. Further he concludes that (1975:250), "the school budget, its policies, the characteristics of the teachers are either secondary or completely irrelevant."

Newland (1933) attempted to find the factors that led to the success or failure of high school students. She studied a group of one hundred students from an Edmonton high school. She used three tests in collecting her data which included a personality test,

an I.Q. test and a test of emotional stability. She also had each student fill out a questionnaire, examined their school records and visited their homes.

She found that potential ability is the most important of all factors followed by emotional stability and home status. Most of the failures were in the extrovert stable personality group with no introvert stable personalities among the failures. The age of the students in the high achieving group was significantly lower than that in the lower achieving group. No student in the high achieving group had an outside job while 40% of those students in the lower group had a job. Only 10% of the students in the high achieving group had hobbies while 45% of students in the low achieving group had hobbies. The higher achieving group belonged to more clubs and read more. Students in the top group also studied more on their own and were more consistent in their study habits. Lack of use of potential ability is explained by absence of motivation and incentive and the predominance of mediocre students in academic high schools.

Boardman, Davis and Sanday (1977) view the educational process as a number of interrelated outputs. For example, self esteem may have an effect on achievement which in turn would have an effect on self esteem. The authors postulate four major educational outputs: achievement, motivation, expectations and efficacy. They argue that these variables interact with each other in a positive fashion. Two other endogenous variables are also included, perceived parent's expectations and perceived teacher's expectations. The model was estimated by Two Stage Least Squares with an equation for each of the outputs. The study showed that a number of attitudinal variables are both important inputs and outputs. However (1977:47), "of all the endogenous variables only efficacy has a direct and simultaneous effect on achievement."

Peebles (1986) summarizes a study done by the Ontario Secondary Schools Teacher's Federation (1986) in which 40,000 students from thirteen to nineteen years of age were interviewed. Student views were sought on their schools, teachers, courses, marks, social values and social issues, and their relationship with friends and parents.

Among the findings were (1) the occupational status of parents is directly related to what happens to students in school. Students from white collar homes are likely to have better marks, be in more advanced courses, participate in more school activities and be in more school leadership roles. (2) There is little difference in self esteem between high and low achievers but the less self confidence students have the more susceptible they are to peer pressure. (3) Girls take school more seriously than boys. They take more advanced courses, work harder and get better marks. However, they have more difficulty with school, have lower self esteem and though they argue more with their parents are more anxious to please parents and themselves.

Rock et al. (1985) studied 30,000 high school sophomores who attended 1,000 public and private high schools in 1980. A follow up survey was done on 26,000 of these same students two years later. Two thousand of the 26,000 students in the sample were dropouts at that point. The researchers examined the changes that had occurred in the students over the two year period. They found that: (1) a significant number of students moved out of the general curriculum and into the academic or vocational curriculum during their last two years of high school, (2) all types of attendance problems increased during the last two years of high school but disciplinary problems decreased, (3) students were more likely to do paid work as seniors and their attitudes were more positive towards work, (4) students watched less television a day as seniors, (5) students were less interested in altruistic values as seniors, (6) seniors showed a more positive self concept and an increased sense of control but dropouts showed no change in locus of control, (7) students were less likely as seniors to have stereotyped sex role attitudes and (8) students made significant gains on all achievement tests between their sophomore and senior year. They also found that the belief that success depended on the student's own initiative was positively related to achievement gains in vocabulary, reading and writing.

Throughputs or Process

The throughput or process aspect of the model is the stage where the various inputs from the environment are influenced by various processes in the education system to produce outputs. In their literature review on input-output analyses, Glasman and Biniaminov (1981) indicated a number of school processes that have been used in various studies. These include tracking, library resources, materials and supplies expenditures, administrative expenditures, institutional expenditures, extracurricular expenditures, administrative manpower, auxiliary manpower, teacher turnover, teacher's salary, teacher education, teacher experience, teacher's verbal achievement, personal characteristics, teacher assignments and teacher attitudes.

Some of these variables were measured in this study. The choice was based on the literature review and was also determined by time constraints and the availability of information. This set of variables is considered under the headings: School Services and Facilities, Staff, Expenditures, and Cognitive and Non Cognitive Achievement.

School Services and Facilities

Rock et al. (1985) found that several school process and school related behavior variables affected achievement gains for students positively. Students did better in schools where a large number of students were enrolled in academic curriculum and where there was a large course offering in non-remedial courses in the new basics. Achievement was greater in schools with fewer disciplinary problems and where parents were interested in what went on in the school. Achievement was also greater in those schools where the students rated their teachers and the quality of instruction higher. Students who did more homework and took more courses beyond the remedial or functional level showed greater achievement gains. Students in the academic curriculum did better than students in the general curriculum and both groups did better than the students in the vocational curriculum.

They also found that there is not equal access to those school processes that affect achievement gain. Students from low socioeconomic status are exposed to a different set of educational opportunities. Schools in lower socioeconomic areas have fewer students enrolled in academic curriculum, offer fewer advanced academic courses, require their university preparatory students to take fewer mathematics, science, and foreign language courses, have higher rates of absenteeism and suspension, have less parental interest and more discipline problems, have fewer students rating their instruction highly and have less money to spend on educational programs.

Summers and Wolfe (1975) in their benchmark study for the Federal Reserve Bank of Philadelphia consider several input and process variables including race, mean neighborhood income, student's prior achievement, unexcused absences and lates, size of school, head start participation, various school expenditure items, quality of education and experience of staff, number of disruptive incidents and the average dropout rate. The output measure is the difference between the current achievement and the previous achievement as measured on a composite achievement test. They concluded that the finding of the Equal Educational Opportunity Study that schools exert minimal influence over outcomes resulted from the aggregation of the data. This meant that there was no control for the beginning level of students and the lack of pupil specific data caused input effects to be hidden. The study of 1,986 primary to grade twelve students from 150 different schools over a three year period confirmed their theory.

Disaggregating the data revealed that some inputs had directly opposite effects for some students. For example, interaction of the independent variables revealed that high achieving students did better with experienced teachers but low achieving students did not; low achievers did better in smaller classes but high achievers didn't; high achieving students benefited most from teachers coming from high rated colleges and high achievers were most affected by disruptive incidents.

This study challenged some of the major findings of Coleman (1966) and has had

a major influence on the focus of such studies since. It switched the emphasis from large aggregated samples to individual students in individual classrooms.

Saks and Brown (1984) attempt to relate reasoning skills to years in school and then to income earning capacity. In their model they look at the best use of time and resources to produce learning. They maintain that more years in school produce better reasoning skills which in turn means that people are better able to cope and solve problems which leads to higher incomes. They believe that in the future we will be moving toward a service economy in which functional literacy and reasoning skills will be the basic skills necessary. People with better reasoning skills will be better able to adapt.

Monk (1981) believes that more attention needs to be paid to how resources are distributed among and within schools. He found that increases in state aid did not necessarily lead to increased expenditures on education. Monk asserts that education production function studies have shown that changes in school resources can have a significant impact on achievement. He believes there is a need to know how certain types of resources affect students as well as the way these resources are distributed. He charges that there has been little interest outside of Brown and Saks (1975, 1980) in determining how economic principles apply to internal operations of schools and classrooms. Monk further indicates (1982) that to improve educational efficiency more must be learned about the way resources are distributed in classrooms.

Monk also believes that the level of student efficiency has three distinct effects on the educational production process which he refers to as (a) the productivity effect, (b) the cost effect, and (c) the substitution effect. The productivity effect means that more efficient students will have higher marginal products and will take less of each input to achieve them. The cost effect means that the more efficient student loses more learning over a given period of time if that time is lost. The substitution effect refers to the efficiency or ease with which one input can be associated with others for more efficient students. That would mean a shift of resources away from the more efficient student to

the less efficient student would lower the overall average of the whole group. Monk concludes that to reduce inequality more attention needs to be paid to pupil specific flows of resources. Also, for certain students, some resources are more productive than others so means must be found to ensure that the correct resources reach the right students.

Monk claims that the cost of educational resources has to be considered from a number of perspectives. Most important are the administrator's perspective, the teacher's perspective, the student's perspective and the parent's perspective. Each of these individuals will have a direct or indirect control over the allocation of these resources.

Rowley and Leckie (1976) studied 2,526 grade seven students in 99 different classes in 17 different schools of an Ontario school district during the 1972-73 school year. They found that peer group influences, class size and years of professional experience of teachers were all positively related to achievement. In addition it was concluded that the provision of equipment, facilities for physical education, the organization of open-space and continuous progress teaching methods, teacher's attributes, student densities in schools and the average income of the neighborhood all had differential effects on achievement depending on whether the subject was reading or writing. For example household income and density had a positive effect on writing but no effect on reading. Increased facilities for physical education had an adverse effect on writing. Also continuous progress may adversely affect writing while television may stimulate it without having the same impact on reading.

Staff

Hanushek (1981:30) claims that among the things which are known to be fairly certain about student achievement are the following:

1. There is a large dispersion in student achievement.
2. There are important differences among teachers that lead to differences in student performance.
3. Differences in teacher performance cannot be described by any single set of characteristics.

4. Higher school expenditures per pupil have no visible relationship to higher student performance.

Rosenholtz and Smylie (1984) claim that an attempt is being made through the use of incentives to upgrade the quality of education and the skills of teachers by state and local governments. They argue that these incentives, which generally take the form of increased teacher's salaries and greater opportunities for promotions within the profession are ill conceived. They believe that research studies show that the most important inducement to good teaching and for retaining good teachers in the profession is student learning.

They assert that teachers leave the profession because of a lack of opportunity for professional growth, lack of support from administration, failure to deal with student misbehavior and inadequate preparation time. The cellular nature of teaching and the low starting salaries are also given as reasons why good teachers don't remain. They conclude that the research shows career ladders may help to reduce some of these problems by providing opportunities for teachers' skill development which will increase the probability of student academic success and, therefore, increase teachers' intrinsic rewards. They also suggest that a collegial approach to teaching leads to increased student learning which in turn results in a higher rate of teacher retention.

Schneider (1985) studied 493 elementary school children from grades four through seven in four urban area schools. In each case achievement test scores as well as family characteristics and school information were matched with individual students. Schneider found that vocabulary achievement was positively related to the pretest, teacher degree, and peer group reading performance. When the dependent measure is effort, the standardized gain score in vocabulary achievement, pretest and grades is statistically significant. She found schools that were effective when controlling for socioeconomic factors. In effective schools teachers had high expectations of students. Parents were actively involved in the schools and in the instructional programs. Effective schools were smaller. Teachers were less experienced. Teachers with M. A.'s were no more effective

than teachers with bachelor's degrees. Teachers allocated more time to instruction in effective schools.

Rutter et al. (1979) set out to disprove the findings of Coleman (1966) and Jencks (1972) that schools make little difference in educational outcomes. They assert that if schools are to be judged on the basis of the strength of certain school variables and achievement it is essential that the variables measured be the right ones. Their main criticism of Coleman is that the measures that he used were not the aspects of school life that have the greatest impact upon achievement.

Their major findings are similar to the findings of some other recent studies. That is, children benefit most from attending schools where good standards are present, where the staff provide good role models, where the children are praised and given responsibility, where the overall climate is good and where the lessons are conducted in a professional manner.

The Alberta Minister's Advisory Committee on Student Achievement (1979) pointed to five promising teaching behavior variables that lead to significant results. They are clarity, variability, enthusiasm, task orientation or businesslike manner, and student opportunity to learn what is being tested. In addition students of low socioeconomic background learned best in a controlled atmosphere while students with high socioeconomic backgrounds learned best in a less structured environment.

Kratzmann et al. (1980) headed a commission which was charged with examining teacher's working conditions and the way they related to the quality of education and services provided. The commissioners made several recommendations to improve the working conditions of teachers and thus the overall quality of education. Their literature review resulted in five generalizations about the relationship between the quality of teacher's work life and the quality of education of a pupil. They are (1) the time a teacher devotes to formal instruction has a decisive impact on pupil development, (2) the fewer the number of pupils the greater the potential for pupil development, (3) the greater the

diversity of pupil profiles in a class the lower the potential for pupil development, (4) teacher stress and dissatisfaction are directly proportional to the number of pupils and the diversity of profiles, and (5) the climate of the system and the school have a strong indirect influence on development.

Baksh and Martin (1986) surveyed over twenty thousand high school students in the Atlantic Provinces about the causes of poor academic performance. One of the most frequent responses was teacher incompetence. Students felt that some classes are pointless because of the poor instruction. They also felt that knowledge of the subject area doesn't mean the teacher will be successful. Students referred to outdated teaching methods, unwillingness to vary classroom routine, lack of caring, laziness, insufficient time on instruction, inability in communicating and too much paper work as some of the specific problem areas. Students do not blame all teachers and are quite careful about limiting their blame to "some" teachers.

Expenditures

Hanushek (1981) asserts that despite an average yearly growth rate of 6% in real expenditures on education from 1960 to 1975, achievement declined 10% in the United States during the same period. He maintains that these statistics cast considerable doubt on the assumption that student achievement can be improved by increasing the expenditures on education. In the same article Hanushek compiled data from portions of 130 studies that deal with student performance and expenditures. The data indicate that there is a very weak correlation between traditional inputs like teacher-student ratio, teacher education, teacher's salary and student achievement. Therefore, he asserts continuing to increase expenditures in these areas will have no long term effect in terms of higher student achievement.

Spencer and Wiley (1981:44) attempt to point out an error in Hanushek's basic conclusion "that there is no relationship between student performance and school

expenditure patterns." They attack Hanushek for not putting enough emphasis on goals. Their contention is that schooling has two central aspects, goals and resources. They assert that to judge how well the resources are used there must be some knowledge of what the goals are. They argue that economists have largely ignored this diversity of goals. They also assert that researchers would do better to shift their emphasis to the process by which resources give rise to outputs. They note that there is now a move in this direction and refer to Gilmartin and Rossi (1982:11) who state,

> unless educational programs are planned, monitored and publicized so as to achieve educational goals and strengthen public commitment to the educational process, a rocky and troubled future can be predicted for public schools.

O'Neil, Burton and Horowitz (1972) consider the desirability of imposing a court order which would require a school district to equalize teacher expenditures per pupil (within a 5% range) at all times and among all schools within the district. As a result of their analysis the authors argue that the amount of dollar expenditures on teachers does not necessarily measure educational quality, particularly among schools in the same district where hiring, salary rate and assignment are centralized. They attempted to determine whether the 1971 fiscal year expenditure was correlated with more direct indications of the quality of schooling received.

They found that there was only circumstantial evidence to suggest that a small component of teacher expenditure per pupil was causing variation in quality of education. They concluded that there was some danger in imposing the order because (1972:325) "it has a high probability of doing nothing to improve the situation, a medium size probability of making the situation worse and a very small probability of improving the situation."

Akin and Garfinkel (1977) assert that per pupil expenditures are positively related to achievement, verbal ability, years of schooling and earnings. Their survey contains information for the five years 1968 through 1972 and was obtained from the

University of Michigan Research Center's Income Dynamics Panel. Verbal ability and achievement-orientation questionnaires were administered during the fifth year of the study. They used only male respondents between the ages of 30 and 55 in 1972. The final sample was 1,049, of which 716 were white and 333 were black.

The study allowed for per capita income differences, indirect effects through motivation, verbal ability, and years of schooling. They concluded that school expenditures still have a large and statistically significant positive effect on earnings. They also claimed that their results cast doubt on the hypothesis that the school expenditures variable serves mainly as a proxy for differences in per capita income. They concluded that the rate of return for blacks is quite high and the return for whites is respectable regardless of the model used. However, they noted that their ignorance of how higher school expenditures get translated into higher earnings should cause their results in this area to be treated with caution.

Cognitive and Non Cognitive Influences

Winkler (1975) examines the role that racial and social composition of the school peer group play in educational production. He considers inputs such as the number of cultural items in the student's home, number of siblings and home ownership. Process variables which included aggregate expenditure per pupil, aggregate expenditure on teachers' salaries, student teacher ratio, quality of teacher education and peer group composition are also studied. Both the inputs and process variables are considered in relation to outputs as measured by student achievement tests.

An analysis of variance was used to examine the differences between mean values of SES composition of peer groups by race, socioeconomic status, and track in school. All differences were found to be statistically significant. When the process variables were examined it was noted that expenditures on school administration were statistically significant for both black and white students but aggregated teacher salary was more

important for the white students. Using separate regression models for the black and white samples they also found that increasing the proportion of black students in schools would increase the achievement of whites if the socioeconomic levels were maintained. Among some of the other findings (1975:210-202) were that blacks have a much higher proportion of low socioeconomic status peers, teachers from prestigious colleges have a positive effect on the achievement of both whites and blacks, and "social class integration is a necessary condition for the provision of equal educational opportunity."

Beiker and Anschel (1973:515) attempt to determine whether "production relationships differ significantly between different curricula within rural high schools when a single standardized achievement test is used." The data were obtained from 226 eleventh grade students from five rural high schools in Kentucky. They found (1973:516) that "there was no unique function to describe the relationship between high school inputs and product." Instead each form of curriculum had to be analyzed individually. To support this finding they indicate that the coefficients of the equations for the general and vocational curricula differed significantly from the coefficients for the academic curriculum. This they assert shows the relationship between inputs and outputs varies according to the type of curriculum and therefore the function must be fitted to each separately. It was also discovered that the R^2 values between the selected inputs and the measure of output for the vocational and academic curricula were extremely low. The selected inputs were the resources invested in the student by the school system, the student's ability, the student's motivation and the extent of family support for the education process. This, they believe, indicates that the Stanford Achievement Test is an inadequate measure of the outputs of these curricula.

Stewart (1983) conducted a study of the differences in characteristics of three groups of nursing students: dropouts, marginals, and high achievers. The ability, achievement, demographic and social interaction characteristics of the three groups were compared. Previous findings (1983:21) that academic integration may be more important

than social integration for students who drop out were confirmed. They concluded that ability and achievement predict success in academia and state board examinations but they are not useful in determining who will be successful in practice.

The hypothesis that ability scores for marginal students were lower than for high achievers was supported only in part. Marginal students scored lower on achievement tests than high achievers. There was a positive relationship between achievement test results and state board examinations. There was no support found for the hypothesis that marginal students were more inclined to social interaction than high achievers.

Perl (1973) examines the relationship between the scores of students on tests of academic ability (grade 12) and students' family background, the background of the students' high school classmates, components of expenditure per pupil at a particular high school, student-teacher ratio, teacher experience, teacher salaries, teacher education, age of school building, library expenditures and school enrollment. Both aggregated and disaggregated data were used for the various components of the expenditure per pupil at the high school level. Regression equations were computed to describe the relationship between each of the output variables and the different input variables.

The conclusions reached in the Perl study were somewhat different from the major conclusions reached in the Equality of Educational Opportunity Report (1966) partly because alternative statistical techniques were applied to the data. Perl attributes these differences to the fact that the EEO studied the differences between blacks and whites while his work concentrates on the differences between high income and low income students. He maintains that the same pattern of interaction does not take place in both cases. He states (1973:178),

> this is particularly true in light of the generalization accepted by most analysts that the beneficial effects of integration by race result primarily from the fact that it is generally associated with integration by socioeconomic status.

He concludes that increasing various components of school expenditures would

have a positive effect on student achievement. However, two important components were negatively related to student performance, certification and teacher experience. He also concludes that compensatory education would go further to accomplish a redistribution of educational output than would integration. As well, he asserts that school integration would lower the scores of high income students more than it would raise the scores of low income students.

Kerr et al. (1986:20) argue that "there has been no behavioral analysis of those skills which enable a student to function competently at the high school level." They assert there is no list of survival skills that will enable a high school student to function successfully. The object of their study is to determine if the information students gave in a previous study through the personal interview technique, (Brown et al.:1984), matched their observed behavior in the classroom. The previous study found that successful students took an active approach to the demands of school while unsuccessful students remained passive in the same situations. They looked at three areas in their study: (1) class preparedness, (2) exhibiting an interest in academic performance and (3) interacting appropriately with teachers. They found that both successful and unsuccessful students exhibited kinds and levels of behavior very similar to what they reported in the interviews. They also discovered that less successful students had a general awareness of school survival skills but could not apply this knowledge to a great degree. This would seem to suggest that the less successful students may not benefit to the same extent as successful students from traditional methods of information sharing.

Fraser et al. (1986) aim in their study to use data from a large random sample to look at the influence of ability, motivation, quantity and quality of instruction, and the environment of the home and class on cognitive and affective outcomes. The authors submit (1986:38) the following nine factors that must be optimized to increase student achievement of cognitive and affective outcomes.

these factors are the student aptitudinal variables of: (1) ability or prior

> achievement, (2) age, (3) motivation or self-concept as indicated by personality tests or willingness to persevere on learning tasks; the instructional variables of: (4) quantity of instruction (5) the quality of the instructional experiences; and educationally stimulating psychological aspects of the: (6) home environment, (7) the classroom or school environment, (8) the peer group environment and (9) the mass media (especially television)

They assert that forces like economic, political, and sociological characteristics are not as relevant to achievement as the nine factors because they are less alterable, direct and observable. They also point out that these latter three factors can support or interfere with the other nine factors.

Their research also identifies four productivity factors which predict cognitive achievement and which are relatively unalterable. They are ability, home environment, gender and race. Of the four, ability is the only factor also associated with student attitude. There are also identified school variables that are relatively alterable and are significant independent predictors of both student achievement and attitude. They are (1) motivation, (2) quality of instruction, (3) class environment and (4) amount of television viewing time. The study indicated that no single factor alone can produce major increases in educational learning. They suggest that improving all the predictive factors would seem to be the best policy rather than just improving one. The results also contradict findings that school learning is too complex to be understood in terms of a relatively small number of underlying factors. Another notion dispelled by this study is that the only important factors in predicting student outcomes are those that cannot be altered by teachers in the school.

Brown and Saks (1986) examine whether learning rates vary across students, teachers and across subject matter as a function of instructional time. Data were examined from the Beginning Teacher Evaluation Study (BTES). They found that time has positive effects in both reading and mathematics at different grade levels but the effects vary significantly across teachers in mathematics. Also a given increase in time adds more to the score of a lower-ability than a higher ability student.

Dar and Resh (1986) examine the hypothesis that classroom intellectual composition affects academic achievement and interacts with personal ability in such a way that the lower the ability the more sensitive it is to the intellectual composition. They found that classroom intellectual composition positively affects a student's academic achievement beyond the effect of his or her personal intellectual resources. There is also an interaction between personal and compositional resources and the compositional effect is stronger among low resource students. In situations where there is an impoverished student learning environment the lower ability students lose more than is gained by the higher ability students. This shows (1986:370) that "integration is not a zero sum game where the gain of one group equals the loss of the other." Said another way (1986:371),

> The heterogeneous class is more advantageous for low resource students than the low homogeneous one, and there is no real disadvantage for high resource students in the heterogeneous class versus the high homogeneous one.

The study also showed that socioeconomic integration is preferred to ethnic integration if what is desired is the educational achievement of low socioeconomic students.

Henderson, Mieszkowski, and Sauvageau (1976) studied a sample of 7,000 to 8,000 elementary school students from Montreal in kindergarten to the end of grade three over a three year period. The students were in grade three during the 1971-72 academic year. They used eight separate regression equations to report their results. They concluded that family background and pre-school I.Q. are two of the most important determinants of achievement. As well they state (1976:62) "the teacher and school variables measured in our study generally have no apparent, consistent or large impact on achievement." They also argue that the optimum class size for purposes of achievement is between 30 and 40 students. Changing the composition of the peer groups can have an impact on achievement that is equated or exceeded by a difference in personal I.Q.

They also conclude that the gains for both strong and weak students will be the same for both types of students if they are moved from a weaker to a stronger class.

When mixing strong and weak students the weaker students gain more than the stronger students lose, thus increasing average achievement levels.

Outputs

According to Thorndike (1963:2) educational achievement is "some standard of expected performance." Thomas (1981) in Wilson (1981:251) believes that we cannot define achievement without knowing what the goals of education are. Student achievement then implies that there must be some goal or objective that a student should attain. This, of course, opens up a series of complicated questions. What objectives should be achieved? How are those objectives to be determined? Is everyone expected to achieve the same objectives? All of these questions are important but the fundamental question that must be considered is the purpose society has for its schools.

Probably most people would argue that the main purpose of the education system in our society is to provide a good quality education for all students. In a democratic society there will always be debate over what constitutes a good quality education as well as the means for achieving it. Several studies starting with Goodman (1959) and continuing to the present day have attempted to measure the quality of education usually by using some form of standardized achievement test. According to Glasman and Biniaminov (1981:513) in their review of the literature on the input-output analysis of schools,

> three-fifths of the studies used only cognitive outputs. One study (Tuchman 1971) used only non-cognitive outputs; the rest used both. All studies that measured cognitive outputs used standardized achievement tests (SAT) excluding Raymond (1968) who used the American College Test.

However, it is debatable whether or not standardized achievement tests or, indeed, any single measure of student achievement is an adequate measure. Researchers and theorists such as Herman and Yeh (1980:227), Bridge and Judd (1979:289) and others have questioned their validity. The present study will attempt to avoid those issues by using a definition of achievement or output which will be consistent with the way society

has structured its schools with specific references to schools in Nova Scotia.

According to the Goals of Basic Education for Alberta in Principles for a New School Act (1985:21A)

> completion of diploma requirement is expected to provide the graduate with basic preparation for lifelong learning. Dependent on program choices, the diploma also enables job entry or further formal study.

Successive generations of government have assumed direct responsibility for providing a certain level of education for all. While there may be vocational and technical programs and a variety of other programs which will help to increase employability the basic primary to twelve system is still intact. Some researchers like Wilson (1981) believe that in the 1950's most jobs did not require a high school diploma but that in the 1980's very few do not. This they argue means that students now must stay in school to achieve senior matriculation even though this will not guarantee them employment.

Forget (1985) asserts that in Canada we should be moving toward an educational threshold that will determine a certain level of literacy and would prevent premature depreciation or decay of the investment involved. Labor market statistics tend to support the notion that for an advanced industrial economy like Canada that threshold should be grade twelve education. According to Forget (1985:2),

> Census data for 1981 show that for those without high school diplomas or equivalent trade certificates, unemployment rates were 72% higher than for other groups with those qualifications or better. During the 1976-81 period, as many as 37% of all eighteen year old Canadians had not yet graduated from high school.

It seems then that the basis for government taking full and direct responsibility for the primary to twelve system, as well as for some other programs, is probably related to the assumption that the quality of life in a democratic society will increase with the number of years in school. This assumption is confirmed by researchers like Weisrod (1963), Schultz (1971), Schultz (1980), Sewell (1975), Johnson (1973), Fagerlind (1975), Morgenstern (1973), Ribich (1975), Griliches and Mason (1972) and others who have tied income to the level and quality of education achieved.

Therefore the measure of output for this study was based on the assumptions of what society generally accepts as a measure of success and on what research confirms is the key to a good standard of living. This means that two types of output were considered in the study. Those students who were successful in attaining the Nova Scotia Senior High School Diploma were viewed as having achieved. Those students who left school without receiving their high school diploma were considered as not having achieved.

Dropouts and Graduates

Justiz and Kameen (1986) examine partnerships between education and business that have shaped the educational system in the past and have worked toward improving the quality and numbers of educated youth. Much of their article is devoted to an examination of the dropout problem in the United States. The following points are made in the article concerning dropouts: (1) in 1986, 2.5 million students graduated from grade 12 in the U.S. and 1/3 of a million did not graduate, (2) gifted and talented students made up 18% of all dropouts, (3) 80% of all fathers and 70% of all mothers of dropouts never completed high school, (4) dropping out almost always diminished the quality of life of the dropout, (5) only 60% of male dropouts and 33 1/3% of female dropouts are employed full or part time two years after leaving school and (6) by 1990 there will be 1.5 million fewer 16-24 year olds entering the labor market than there were in 1980.

The authors argue that in the early part of this century it was the economic realities that reshaped the education system. In the 1960's it was the country's social agenda that shaped education policy and practice. The authors submit that the time has now come for another partnership between business and education for the purpose of solving the dropout problem.

Rock et al. (1985) found that the students who were dropouts differed significantly from those students who remained in school. In comparing dropouts to their base year

characteristics (1985:2) dropouts,

(1) had lower test scores and lower school grades
(2) did less homework
(3) had lower self esteem and less sense of control over their lives
(4) had more disciplinary problems in school
(5) dated more frequently and spent more time dating and driving around
(6) had parents who were less likely to know what the students were doing

The reasons given by the students themselves for dropping out were that they disliked school (33%), had poor grades (33%), went to work (28%) or couldn't get along with teachers (16%). Twenty-five percent of the female dropouts cited pregnancy as the reason for leaving school.

Pallas (1984) examines three perspectives of why youths do not finish high school. The perspectives studied were the Academic performance perspective, the Social Disability perspective and the Accelerated Role Transition perspective. He also sought to determine whether the factors that govern high school graduation are the same as the factors that govern dropping out. He found that academic ability and socioeconomic status were more important for those students going on to university than for graduation from high school. In addition, high school experience had greater impact on drop outs than it did for those going on to university. He asserts that although there are notable differences in the analyses of the high school attainment and the dropout processes it is not sufficiently large to compromise the educational attainment literature. Most of the variables related to low achievement are also the same variables that are related to dropping out. However, the evidence offered is indirect.

The analyses point to aspects of the high school experience which are important and have not been considered to have implications for high school outcomes. These he asserts deserve further attention. He argues that more work should be done to determine whether the decision to drop out can be traced to early school experiences. In addition, he suggests that there be more detailed examination of factors such as single parent households and number of brothers and sisters in an attempt to explain how family and

socioeconomic background influence continuation decisions. As well, there needs to be more sensitive measures of accelerated role transitions and increased attention to the structure of success and failure in schools.

Pittman (1986:7) refers to a previous study by Beck and Muria (1980) in which they postulated that "the dropout problem originates from a lack of congruence between the cultural experiences a child brings to school and those necessary to perform adequately within that environment." Pittman restates their argument that this "lack of congruence" causes social isolation and this isolation will increase as the student moves through school and increasing demands are made on him. These signs of withdrawal are manifested by poor motivation for school work, non participation in school activities, little interaction with authority figures (teachers) and gradually to poor academic performance, poor attendance, increased incidents of disruptive behavior and finally dropping out altogether.

Interviews were conducted with 185 dropouts from a rural school system. He found that one-half of the reasons listed for leaving school related to the student's personal relationship with various components of the school environment. Teacher characteristics were very important to this group. Of the reasons given for liking a particular teacher 88% related to characteristics that were personal, affective reasons.

Pittman restates Tinto (1975) in asserting that a lack of social integration into the school culture is the prime reason for dropping out. He uses Tinto's definition of social integration which he says (1986:12) is "commitment to the institutions and the social relationships which existed within the environment." Such a commitment would be reflected in peer relationships, interactions with teachers and other school officials, and participation in activities which make up the social system of the school.

Pittman argues that for dropout programs to be successful they must address the personal affective aspects of the student's life while dealing with the cognitive aspects. Improved social integration will mean improved academic integration. In his study two

out of every three reasons given for leaving high school were school related and of these, two-thirds were personal or social in nature.

Strother (1986) asserts that the dropout problem in the United States is getting worse. Nation wide 25% of potential high school graduates quit before graduation and in many big cities in the U.S. the dropout rate now exceeds 40%. Strother argues that any attempt to improve achievement levels will be undermined without an attempt to improve the dropout problem. In her paper she gives the profile of the high school dropout taken from a previous study (Ekstrom et al. 1986) when she states (1986:336),

> the researchers found that a disproportionate number of dropouts were male, older than average for their grade level, and members of racial or ethnic minorities. They were likely to attend urban public schools in the South or West. They came from low-income often single parent families; many had mothers who worked outside the home, who lacked formal education, and who had low educational expectations for their children. These young people had few study aids available to them at home, and their parents were not interested in monitoring their school or nonschool activities. They had fewer opportunities than their classmates for learning outside school; their grades and test scores were lower; they read less, did less homework, and reported having more disciplinary problems in school. They also reported that they were unpopular with other students and alienated from school life. They tended not to take part in extracurricular activities, and they said that their jobs were more important to them than school.

She found that the student's home environment had had critical but indirect effect on the decision to drop out. She also noted that few studies have focused on students who have the same characteristics but who graduated nonetheless. Strother refers to Schultz et al. (1986) and their study when she says (1986:327) that "reading achievement and age on entering high school -not race or gender - were the best predictors of dropping out." She suggests that the emphasis should be on increasing reading achievement without having students repeat the grade. She also points out that high school dropouts make up 60% of the prison population in the United States and that dropouts in that country cost taxpayers $75 billion a year in lost revenues and welfare benefits.

Strother asserts (1986:327) that to reduce the dropout rate schools must reduce,

(1) alienation from teachers, administrators and peers

(2) poor attendance and high truancy rates
(3) low academic achievement especially in reading
(4) negative economic and social pressures at home or in school.

She also asserts (1986:327) that some researchers like Schultz et al. (1986) "have tried to separate the effects of high schools on dropout rates from the effects of student characteristics." When they compared rankings of the same high schools with the student attributes removed they found that some schools with low dropout rates did not perform well while others with high dropout rates had good performance. This may be an indication that there is a greater risk of dropping out in those schools where the demands, expectations, and achievement test performance are higher.

Sherraden (1986) argues that the dropout problem must be explained by income and not by race. Also he asserts it is a problem that must not be viewed in isolation but along with other disturbing trends among youth. He states (1986:20),

> data on unemployment, crime, drug and alcohol abuse, political alienation, cults, runaways, out-of-wedlock births, and deaths by homicide and suicide describe a deteriorating condition of young people in the United States over the past two or three decades.

He maintains that historically the labor market absorbed many of the marginal students who did not want to attend school but now young people are becoming economically irrelevant. In addition he claims schools have been made to take on responsibilities for meeting ever increasing demands for a skilled labor force while at the same time carrying out many of the socialization functions that were previously the responsibility of the community and the family. The result he declares is that the transition from childhood to adulthood is not being managed effectively by the labor market, the family and the school.

Sherraden also considers the problem from an institutional analysis perspective. In that sense he argues (1986:25) the problem is best understood "as historical developments created by population and technological influences on supply and demand for labor." Since he sees the basis of the problem as economic he recommends the establishment of a national service that would exist in partnership with the schools. This would provide

jobs for those who needed or wanted them and it would also allow for integration into the community, an opportunity to complete a high school education and a better chance to move toward an independent adulthood. This he believes would substantially decrease the number of dropouts.

The Institute For Educational Leadership, Inc. (1986) point out that in Japan the dropout rate is only 7% compared to the dropout rate in the United States of 28%. They also state that in both Japan and West Germany dropouts receive help immediately on leaving so they become productive members of the work force. They assert (1986:2) that dropouts in the United States (ages 25-34) "cost 71 billion in lost tax revenue, 3 billion for welfare and unemployment; 3 billion for crime prevention." It is also stated (1986:2),

> in 1950, seventeen workers paid the social security benefits of each retiree. By 1992, only three will provide the funds for each retiree and one of the three workers will be minority as reported by Harold Hodgkinson in All One System.

They suggest that the new reform movement might increase an already serious problem by increasing standards when present at risk students cannot reach the existing ones. It is submitted that there are school-based interactions that can help to reduce the dropout problem such as developmental early childhood programs, reduction of school structures and teacher workloads, competency based promotion, Summer programs, alternative high school programs, inservice individualized training, experiential education, bilingual education and collaboration. It is stated in their profile of the dropout that (1986:7),

> most, but not all, come from low-income or poverty settings; have low basic academic skills, especially in reading and mathematics, show limited aspirations and low self esteem; and perceive that they have little control over their future.

Students from lower socioeconomic status are three times as likely to drop out compared to high socioeconomic students and are also less likely to return to school or take a G.E.D. course. In addition when achievement test results are compared with academic records dropouts are not performing to their potential. As well (1986:9) "urban students

are nearly twice as likely to drop out as suburban or rural students." The states that have the lowest dropout rates are in the midwest where the population is more rural, homogeneous and older and where the schools tend to be smaller and are linked closely to the community.

While family conditions and economic factors are important the most common reason for school leaving is poor academic performance. It is asserted that young people leave school for a number of reasons but there are sub-groups who leave for academic, economic, family reasons or a combination.

It is stated (1986:32),

> the single best predictor of a potential dropout is that a student is held back before the eighth grade. Warning signs in high school include low grades, failed courses and low attendance.

McDill, Natriello, and Pallas (1985) argue that recent reform commissions have all recommended increases in educational standards but have not considered the effects on dropouts. They have not given equal attention to the problems of quality and equality of education nor have they considered the dropout problem as an equality and an equity problem.

They suggest that the reasons for dropping out can be grouped according to school expenditures, family background and economic factors. The most common reasons for leaving school are poor academic performance and low ability. Teenage pregnancy, and broken homes also contribute to the dropout rate. Students from broken homes are twice as likely to drop out as are students from two parent homes. Economic conditions are also important with many students leaving school to go to work. They assert that raising standards may interact with these factors to diminish or increase the dropout problem.

They question whether students will increase their effort in response to higher standards. They argue that research shows that higher expectations lead to more effort and higher achievement. However, low ability students did not try harder when the pace

was too fast for them. They assert that reforms will lead to increased test scores because those who pull down the averages would have dropped out. To be fair the scores of those students who dropped out must be included to see if standards are really being raised or schools are merely becoming more selective. They give the following profile of the high school dropout (1985:17),

> when compared with high school graduates, dropouts are lower in socioeconomic background, academic aptitude and reading skills, and they have higher rates of absenteeism, truancy, and poorer personal-social adjustments as manifested by aggressive behavior, impulsiveness, early drinking, illicit drug use and delinquency (Neill, 1979; Quay and Allen, 1982; Robins and Ratcliff, 1980).

They indicate that research shows (Elliot, 1978; Gold and Mann,1984) that withdrawal is a result of goal failure and problems with the system of evaluation (Spady,1974). In addition students perceive that the requirements to achieve standards were unattainable which in turn lead to various forms of disengagement including apathy, negative activities, truancy and finally dropping out (Natriello, 1982,1984)

They relate that Kilgore (1982), Keith (1982) and Walberg (1983) have shown that homework has a positive impact on achievement. Also they claim that Natriello and McDill (1984) have shown that homework is positively related to grade point average. In addition they relate that research has shown (Morgan and Alwin,1980), (Blau and Shoenherr, 1971) and (Levin, 1983) that the size of the school is extremely important for order and achievement level. The larger the school the more difficult it is to maintain the order necessary for high achievement.

Peterson et al. (1985) show that retained students outperformed their promoted counterparts on achievement tests in the first year following retention. Retained students lost their superiority by the second year in most cases and in all cases by the third year. The authors assert that while there is no covering evidence that retention is beneficial there is also little evidence in this study to indicate retention is harmful. The study did not consider the effects of retention on personal adjustment, self concept, attitudes towards

school and so on.

Riffel and Switzer (1986) briefly reviewed the practice of student retention and promotion along with the research on this topic. They surmise that there are very complex issues involved and that research conclusions show that either social promotion or grade retention can be appropriate depending on the circumstances.

They maintain too often grade retention means grade repetition and alternative practices might produce better results. They assert that all parties including the student should be involved in a decision for retention and because of the social labels attached to grade failure opportunities be provided for the student to catch up. They argue for multiple measures of achievement as well as means to assess the readiness and prospects for success of the student at the next level.

Friesen (1967) studied 2,425 students who were attending school in grades nine to twelve in two urban Canadian high schools. The students were divided into two groups one of which wanted to leave school prior to senior high school graduation while the other wanted to stay and graduate. The attitudes and experiences of the two groups compared were socioeconomic status, school experiences, tracking, future orientation, sports orientation, religious orientation, academic orientation, conformity, parent influence, and teacher influence. He found that potential dropouts came from lower socioeconomic status homes, were more unhappy at school, were less future oriented, had a more negative orientation towards religion, were less academically oriented, were more alienated from school, and were less influenced by parents or teachers. It was surmised that the study gives some support to the explanation that the potential dropout seeks activities that will give him the pleasure that he cannot seem to find at school, at church or in the home.

Freidman, Glickman and Utada (1985) studied 279 graduates and 148 dropouts who were attending high school in the 1980-81 academic year. They attempted to find to what degree drug abuse contributes to a failure to graduate from high school. They

controlled for grade point average, age, sex, race, religion, mother's highest education level, father's highest education level, mother's occupation, number of siblings, family structure, type of family income, whether the student had ever run away from home and various psychological disorders.

Using multiple regression they found that the grade point average achieved by the respondents was a more powerful predictor of failure than was drug abuse. The mother's education level and the number of family members also were significant predictors of failure to graduate. There was a tendency for more females than males to graduate. The authors speculate that dissatisfaction with school leads to both drug use and dropping out. They argue that dropouts substitute drug use for the satisfaction they cannot obtain in school and as a means of relieving boredom.

White and Browder (1987) interviewed 90 students from a middle school in Cincinnati, Ohio. The students were divided into three groups, discipline problems, discipline and academic problems, and successful students. The counsellors and teachers of each group were also interviewed. When the two groups with discipline problems were compared to the successful group differences were discovered in self concept, drug and alcohol abuse, language, study and memory skills, concentration, discipline, behavior and excitability. Students with discipline and academic problems were also described as less curious, less well liked, less responsible, and less energetic than their successful peers. They relate (1987:113) that Natriello and Dornbush (1984) found that the profile of this latter group most closely approaches the profile of the dropout in previous studies. They argue that improving a student's self-concept may help to reduce discipline problems. They refer to McDill, Natriello, and Pallas (1985) to support their view that offering a wider variety of experiences provides a greater opportunity for more students to have a feeling of success. They indicate that this should occur in extracurriculars as well as academic activities.

Fortenberry and White (1987) review various programs for at risk students in a

number of school districts in the United States. They assert (1987:11) that most of these programs can be categorized by,

> support programs
> academic remediation/development programs
> alternative programs/schools
> work experience programs
> affirmative action job-placement programs

The authors maintain that while many states are raising their standards for high school graduation reformers should not overlook the need to have more students remain in school. To do that successfully they argue the structure of schools must change to accommodate all students. In addition, strong leadership especially from principals is necessary. They state (1987:15) that "learning is both an intellectual and an emotional process."

Irvine (1987) disputes the claim that 18% of student dropouts are gifted. He maintains that if such were the case all the gifted students would be dropping out of school. He argues that the 18% figure is a misrepresentation of Martinson (1972) in her review of an original study done by Van Dyke and Hoyt (1958). The author also argues that notwithstanding the fact that the 18% figure is inaccurate the relevance of a 1958 study on dropouts for today's schools is certainly questionable especially since it was conducted in only one state.

Benedict, Snell and Richard (1987) describe the Enterprise High Program which is a program for students who have given up on school. The two basic components of the program are how to earn a living and how to manage life. Also included in the curriculum are basic academic skills and group problem solving. However, they assert the most basic ingredient of the program is trust which has to be created in an environment that will allow students to risk failure and success.

The authors describe (1987:77) the basics of the Enterprise High Program as follows:

> our program has four constituent parts : (1) the enterprise, (2) the

> simulation, (3) embedded basic academic skills, and (4) embedded group problem solving. Our structure is characterized by three component parts : (1) an ungraded, points based grading system (engagement - and competency - based, where mastery, not time is the terminating factor); (2) weekly collaborative professional development opportunities; and (3) democratic involvement in policy making and administrative decisions of those having an investment in the social order (teachers and students).

Each program site is limited to 50 students and five staff members. Strict standards are not legislated because it is believed that they would only hasten negative behavior. It is argued that existing school programs can be made more meaningful by having more trusting relationships between students and teachers, having students engaged in life based activities, by allowing the students the time they need to master the curriculum, allowing staff time for collegial professional development and by giving staff and students participation in policy making and administration.

Wehlage, Rutter and Turnbaugh (1987) assert that more is known about who has dropped out and why they dropped out than how to prevent students from doing so. They maintain that prevention programs must not only be geared to retaining these students in school but also in providing effective programs for them that will allow a rewarding future. Based on previous research on effective prevention programs the authors propose a model to assist at risk students. They state (1987:71),

> the characteristics of this program can be described under four categories: (1) administration and organization, (2) teacher culture, (3) student culture, and (4) curriculum.

They suggest that the program numbers should be kept small and the teachers involved should be given full responsibility for administration and decisions including admissions and terminations. The teachers involved also should to be willing to deal with the "whole child" which will include dealing with problems in the home, community and peer group. Students must be committed to the rules and willing to change in order to be admitted to the program. The curriculum should involve basic skills as well as sex education and parenting instruction; health care and nutrition education; and community social services.

Pellicano (1987) maintains that the current concerns for at risk youth differ from the concerns for these types of students in the 1960's. He asserts that in the 1960's the concentration was on social disadvantage while today the issue is intellectual and socioeconomic. According to Pellicano (1987:47) "social dynamite has given way to the rising tide of mediocrity." Pellicano believes to stem this "tide of mediocrity" schools must be able to develop what Berger (1978) refers to as a modern consciousness in students. Pellicano (1987:48) relates that for Berger there are four components of this modern consciousness. They are:

> (1) abstraction (rooted in the scientific rationalism of science, technology and economics; (2) componentiality (analyses and syntheses), "the technological mentality"); (3) multirelationality ("ability to keep a large number of relationships in mind simultaneously); and (4) future orientation (long-term planning; emphasis on becoming rather than being).

Pellicano believes that to be successful in today's society one must have a modern mind set or consciousness. The mind set will give people the advantage they need. He argues that schools must address the at risk problem from this perspective. He asserts that schools must be mediating structures and not merely institutions for reproducing social advantage and disadvantage.

Wyse (1987) discusses the reasons for and the effects of dropping out of school as well as some options for dealing with the dropout problem. The author describes the typical dropout as one who has had a history of learning problems, has repeated grades or been socially promoted, does not participate much in extracurricular activities, has been a deportment and absentee problem, is alienated from teachers and peers, comes from a low socioeconomic family with low aspirations and has low self esteem. She refers to the classifications of Young and Reich (1975) when she asserts that there are different types of dropouts. She describes them as (1) the classic dropout, (2) the work-oriented dropout, (3) the homemaker, (4) the family supporter, (5) the cultural isolate, and (6) the intellectual elite.

She asserts that students leave school for societal, individual, educational and

institutional reasons. The individual reasons coincide with the six previous classifications with the typical dropout exhibiting poor attitudes and attendance, failing subjects and being the oldest at their grade level. The educational and institutional causes are related to the ability of the system to respond to the individual needs of the student. In describing the societal causes for dropping out she asserts that the most powerful family characteristic that affects student achievement is the socioeconomic status. She submits that the students learn a set of values from their parents which result in higher or lower educational achievement. She argues that other factors (1987:26) like "exposure to the mass media, role models, peers and personality are all factors which critically affect a dropout's decision to leave school." In discussing the detrimental effects of dropping out in Canada she states (1987:29),

> a table issued by the Department of Employment and Immigration illustrates that the unemployment rate for youth with education only up to grade eight was 26.6% in 1982; for those with high school, 18.7% and those with a university degree it was 9.6%.

Barth (1984) reviews a variety of existing programs for alleviating nonattendance in elementary schools. The reasons for nonattendance are also examined. These determinants may be personal, family related or school related. He asserts that by the sixth grade absentee rates are strong predictors of high school dropping out and nonattendance contributes to poor achievement more than nonachievement contributes to poor attendance. He maintains (1984:154) "school attendance follows when going to school is more rewarding, or at least less punishing, than not going to school."

The Environment

The education system exists in a larger socioeconomic political system which influences the inputs, processes and outputs previously discussed. Some of these influences are obvious and have already been illustrated such as parental income, allocation of resources, and unemployment. However, others are not so obvious to

define and measure.

Greenfield (1963) applies a system analysis to selected school districts, schools and classrooms. Each of these units he considers as a system if it can be shown to relate to the achievement of the students within it. He used analysis of variance to find how much of the variance in achievement is due to each system. A further purpose of the study was to find the source of the variance. The possible sources were intelligence, socioeconomic background, interest or motivation and the impact of the system. Factor analysis was used to accomplished this purpose.

He found that classes, schools and districts were significant sources of variance in pupil achievement and that classes and districts were significantly larger sources of achievement variance than were the schools. Also he found 72% of the common variance and 40% of the total variance was due to a factor called verbal-educational achievement. Fifteen percent of the common variance and 8% of the total variance was due to socioeconomic status and the intellectual ability factor and educational motivation factor were not significant. He asserts the achievement tests like the ones used in his study can be "resolved into factors representing general intelligence and educational attainment." Thus the same achievement test could be used as a measure of ability as well as a measure of educational achievement.

Coleman (1986) examines some often studied relationships between a number of status variables and student outputs as measured by achievement tests in 75 school districts in British Columbia. The main objective of the study was to find what effect school districts have on student achievement. The dependent variables used in the analyses were mathematics achievement scores. The choice of tests was based on the support in the literature (Rutter, Maughan, Mortimer, Ouston, and Smith, 1979) that mathematics scores are the best measures of school effectiveness because they are less dependent on out of school learning. Socioeconomic status accounted for some but not all of the variance in student achievement. The family education level accounted for 41%

of the variance and school district costs for 18%. However the effect of school district cost was negative which meant that (1986:517) "the higher the cost the lower the achievement." At least 30% of the variance between districts was left unexplained.

Bidwell and Kasarda (1980:406) propose a social organizational perspective of schools in which "the social structure of instructional units affects the way they distribute their resources to students and the way the students use the resources that they receive." Thus, the way each classroom is structured socially affects the students' opportunities to learn. A social organizational analysis of schooling envisions an examination of both resource allocation and use, and student attributes under different classroom social structures. They believe that policies which seek to improve outputs must focus on the types of methods used to distribute resources because the way resources are distributed in different social structures will affect achievement. Other variables like teacher seniority and training must be considered within this framework. They maintain that the formal organization of schools can affect achievement to the extent to which it can influence access to the use of resources for schooling.

Wendling and Cohen (1981) looked at the average third grade reading and mathematics scores from over 1000 public elementary schools. They assert that research in the area of education production functions that claims to be at the frontier must take into account individual student data.

The results of their regression analysis were generally what was expected. Greater teacher quality, approved operating expenditures and instructional expenditures were all related to achievement. As well, socioeconomic status, percent minority and median years of schooling of the district were related to achievement. School size and student teacher ratio were also related to achievement but not always in the direction expected.

One of the interesting results of this study was the difference between rural and urban students. The factors that were used to measure achievement among urban and suburban schools did not explain variations among rural schools to the same extent.

Despite the fact that teachers in rural schools were less experienced, instructional and real expenditures were less, and the socioeconomic level was lower, average achievement levels for these same schools were above the state average. Wendling and Cohen (1981:57) express it this way.

> Approximately 15 percent of the variation in achievement among rural schools was explained by these factors, whereas the corresponding figures for the state sample and downstate group were approximately 68 percent and 80 percent respectively. It is obvious that the rural schools were relatively successful, but the source of the success cannot be explained by this analysis.

Wendling and Cohen conclude (1981:61) that there is a real relationship between more experienced teachers, greater real expenditures, and higher academic achievement. They also assert that rural schools need to be looked at further. They speculate that the success of the rural schools may be a result of the stability of the community or the economic base. However, they conclude that the factors are really unknown and should be the subject of further study so that all schools can learn from the experience of the rural schools.

Bidwell and Kasarda (1975:56) attempt to find whether and how "attitudes of school district organization affect the transformation of environmental inputs into student's aggregate levels of academic achievement." They argue that environmental conditions affect achievement through the effects on the school district structure and staff composition. The environmental variables examined were school district size, the number of disadvantaged students and parental education. The organizational variables or intervening variables examined were pupil teacher ratio, administrative intensity (ratio of administrators to classroom teachers), and professional support component and certificated staff qualifications. The achievement variable was reading and mathematics achievement as measured by standardized achievement tests.

They found the following: (1) socioeconomic characteristics influence staff qualifications but have no significant direct effects on formal structure, (2) as pupil-

teacher ratios declined achievement scores rose, (3) as administrative intensity rose, achievement declined, (4) effects of professional support staff on achievement levels were weaker than expected, (5) increasing the percent non white has a depressing effect on achievement, (6) fiscal resources have a strong indirect effect on achievement, (7) school district size has no direct effect on achievement, (8) the effect of socioeconomic status on achievement was the result of the association of this variable with other conditions that influenced achievement, (9) parental education had a slight direct effect on reading achievement but a much stronger direct effect on mathematics achievement and (10) parental education is likely a proxy for other environmental variables that influence achievement.

Burkhalter (1983) wanted to determine if youth demonstrated significantly greater growth in an experimental environment compared to a traditional environment. Her question was answered affirmatively. She divided 208 students into two groups. One group participated in the traditional career exploration program at their school while the other group spent one week at the Alabama Space and Rocket Center in groups of twenty at a time. Teaching was followed by allowing the students to have actual experiences like three G's.

She states (1983:21),

> Recent studies have identified the physical environment as a significant factor in determining student's attitudes toward learning (Day, 1980; Drucker, 1969; Faily, Bursor, & Musemeche, 1979; Faust, 1980, Propst, 1974). A positive influence on the affective domain of the learning environment can be a factor in promoting a positive attitude toward learning achievement.

Her study confirmed her hypothesis that providing an experimental environment would have a positive influence on the affective domain of students that would in turn positively influence student achievement.

Randhawa and Hunt (1987) argue that previous studies (Randhawa and Fu:1973) have shown that students who live in rural areas may be disadvantaged educationally and

socioculturally in terms of the larger society. They also assert that other studies (Taylor and Jones:1963), (Sperry:1965) have shown that the socioeconomic level of rural students plays an important part in the development of their aspirations. They suggest that these studies show that rural students who come from higher socioeconomic backgrounds have higher aspirations and take advantage of educational opportunities while the reverse is true for rural youth from low socioeconomic backgrounds. They state (1987:139),

> urban residents are almost always better educated than rural, regardless of age, maturity, race, or parentage.

In their study Randhawa and Hunt examined achievement test results for 4918 students in grades four, seven, and ten from a midwestern province in Canada. Controlling for ability they sought to uncover any differences in achievement between male and female students as well as any differences between urban and rural students. The results showed that there was a rural superiority in a majority of the subtests. Rural students did better in punctuation, capitalization, and mathematics concepts while the urban students did better on the vocabulary subtest. Females did better than the males on verbal tests while the males did better than the females on quantitative tests. They concluded (1987:147) "that rural-urban differences should be interpreted in terms of specific tests after partialling out group differences in general ability."

Conceptual Model

The conceptual framework for this study was constructed around the basic input-throughput-output model (Figure 2.1) generally used to describe an open system. The model in Figure 2.2 illustrates the conceptual framework of the present study and is organized around those variables derived from the literature review which were deemed to be applicable.

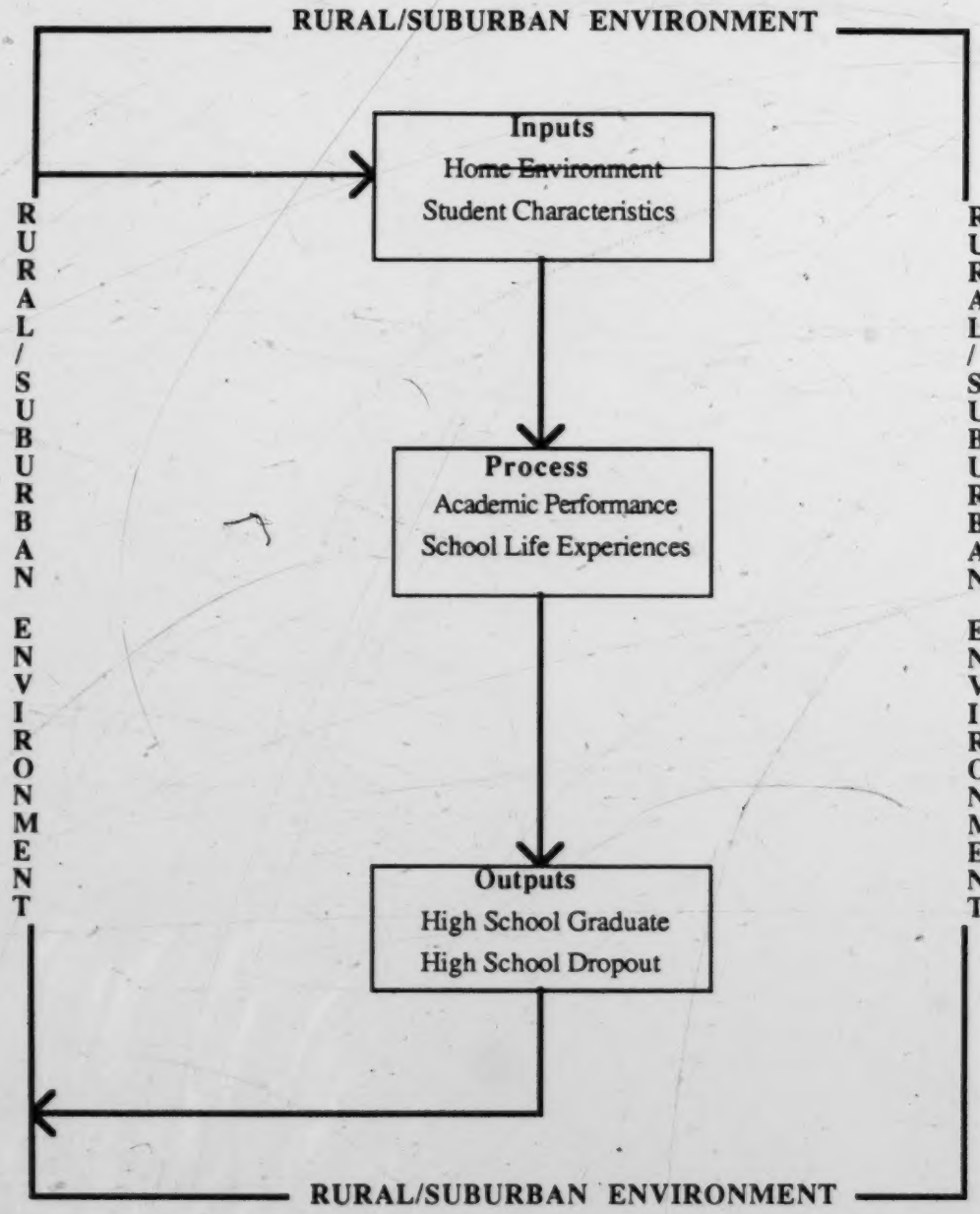

Figure 2.2 - Conceptual Model

Summary

This literature review indicates that a multitude of variables have been used to try and relate educational inputs to educational achievement. There is a general consensus that those variables deemed to be most important are family background and student background, especially those related to socioeconomic status. Also the importance of peer group influence is generally recognized but there is not a great deal of agreement on the importance of other process variables in producing educational achievement. Output measures for the most part have been narrow and confined to standardized tests of basic achievement even though they have been criticized as being an inappropriate measure of student achievement. Interest in general environmental variables has been sparse but recent researchers have started to consider the importance of the environmental differences internal and external to the school.

With some exceptions input-output studies and education production function studies have been done mainly in the United States and the majority were in response to the report on Equal Educational Opportunity released in 1966. Few education production function studies have been done in Canada compared to the United States. However, there has always been interest in the factors affecting high school retention in both countries and the more recent literature shows this interest to be gathering momentum. The literature also shows that high school retention is an acceptable measure of educational achievement and using it instead of standardized achievement tests does not compromise the educational attainment literature.

The literature illustrates that there has been a steady evolvement in input-output studies and that the focus has shifted over time. What began as a macro approach using very large samples and aggregated data has now changed to a micro approach in which the importance of the effects on individual students are stressed. This change , in part, is a response to EEO (.966) and a desire to show that schools can make a difference in the achievement of children.

Finally, these studies have been undertaken by applied researchers who are interested in manipulating variables to achieve practical results and basic researchers who want to understand the most important influences on educational achievement. Criticisms in the literature stress the need for better theory to back up both approaches. There is also a need for more studies which contrast the characteristics of the successful with the unsuccessful student as well as a requirement for more research that will help to uncover the differences between rural and urban students.

The present study was designed to examine the variables related to student achievement by comparing a group of students who had graduated with a group who had dropped out. The basis of the comparison was a selection of variables from the literature review that were grouped as input variables, process variables, and environmental variables. The selection from the literature was based on the possibility of obtaining data on specific items. Inputs were grouped as home environment measures or student characteristics measures. The process variables were grouped as either academic performance indicators or school life experiences. The environmental variables were categorized as either suburban or rural. The outputs were either graduates or dropouts.

Chapter III

Research Design and Methodology

This chapter contains three major sections: (1) the research design (2) the research methodology and (3) the research instrumentation. Included in the research design are the purpose of the study, the questions directed toward the literature review and those guiding the research in the field, a description of the procedures used in the data collection, the ethical standards adhered to in the study and a description of the nature of the study. The section on the research methodology includes a description of the quantitative and qualitative methods applied in the study, the sources of the permission to conduct the research and the actual procedures utilized to collect the data, and a description of how the data was analyzed. The research instrumentation section includes a description of the instruments used in the study and the way they were constructed as well as the procedures used to insure validity and reliability.

Research Design

Purpose of the Study

The purpose of this study was to examine the influences which were most significantly related to the educational achievement of senior high school students. Through a review of the literature it was determined that the most acceptable model to use for this type of study was a variation of the basic open systems model or input-throughput-output model. Given the purpose of the study and the model selected, the problem was stated as follows:

> **What input, process, and environmental variables were significantly related to educational achievement as it was defined in this study?**

A number of questions arising out of the problem statement needed to be addressed through the review of the literature.

(1) What is the most appropriate measure of educational achievement?

(2) Which variables are found to be most significantly related to educational achievement?

(3) What are the input variables that are related to educational achievement?

(4) What are the process variables that are related to educational achievement?

(5) What are the environmental variables that predict educational achievement?

Educational achievement in this study meant the successful completion of the Nova Scotia Senior High School Diploma. The selection of potential predictor variables was achieved by the literature review and the availability of relevant information. Consequently, only a limited number of variables were examined among those that were advanced by researchers as being related to educational achievement.

Given that the study design was based on the definition of achievement as senior matriculation or dropout, additional questions had to be addressed. These became the main questions for the study.

(1) What are the significant differences in input variables between graduates and dropouts?

(2) What are the significant differences in process variables between graduates and dropouts?

(3) What are the significant differences in input variables between graduates and dropouts in rural and suburban settings?

(4) What are the significant differences in process variables between graduates and dropouts in rural and suburban settings?

(5) What are the best descriptors of students who attained their high school diploma?

(6) What are the best descriptors of students who dropped out?

These questions resulted in the formulation of generalizations concerning those variables found to be related to educational achievement as defined for this study. These generalizations may have theoretical implications for the knowledge in this area. Some

may also have practical utility for the educational administrator.

This type of study is referred to in the literature as an input-output analysis or an education production function study. The theory underlying such studies is that a student's academic achievement will depend on his/her internal school experiences and certain personal and environmental characteristics. This study built on that theory by attempting to determine whether or not the selected variables obtained from the literature review did predict student achievement and whether or not their effects varied from student to student and from group to group.

Design of the Study

This study was an ex post facto study done in the field with a view to theoretical and practical utility. The study was an investigation of those variables related to student achievement by comparing students who had graduated from high school with students who had dropped out. Kerlinger (1973:379) defined ex post facto research as,

> systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulatable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables.

Consistent with the discussion of outputs in the conceptual framework, student achievement was considered in terms of whether a student attained the Nova Scotia Senior High School Diploma or left high school before doing so.

Procedures

A stratified random sample of forty-two students was selected from the students who dropped out of senior high school during the 1985-86 academic year, and another stratified random sample of forty-eight students was selected from the group that graduated at the end of the same year.

Erickson and Nosanchuk (1977:138) state that stratified random samples are

"samples with known (but unequal) probabilities of inclusion for various groups (called strata)." Where possible the sample was compared to its accessible population in categories such as intelligence, sex, age, and achievement test scores. Ary et al. (1985:139) define accessible population as "that portion of the population to which one can have access."

In selecting the sample care was taken to ensure that it included a variety of those most important influences considered in the literature to be related to student achievement. Therefore the sample contained students of different socioeconomic backgrounds, suburban and rural dwellers, traditional two parent families as well as other family groupings, and students from different high schools within the district. In addition, because there were relatively few dropouts in the smaller rural high schools all rural dropouts were included in the original sample to ensure their representation in the study.

Consistent with recent trends touched on in the literature review, the focus of this study was on the individual student and the influences that were related to his/her achievement. The information needed to fill each variable category (Appendix 2) was gathered from the student's cumulative record card, a questionnaire completed by each student, appropriate school district records, a semistructured interview and where necessary interviews with staff.

The student's name, address, sex, age, achievement test results, attendance record, deportment record, health record, and academic record were obtained from the cumulative record card. The personal questionnaire was used to obtain information on family background, family's education environment, parent's marital status, peer group influences, student attitudes and student educational aspirations. The semistructured interview served to supplement the information provided through the other procedures and to help provide greater insight into the dynamics relating to dropping out or graduating from high school.

A smaller sample of students who had completed a questionnaire was selected from

both the graduate and dropout sample. Eight graduates and nine dropouts consented to be interviewed. The number of people selected was limited by the time available. The choice of subjects was determined at the time the questionnaire was administered and was based on an impression by the researcher of the willingness and ability of the subject to communicate information in a taped interview. These students were subjected to a semistructured interview (Appendix 3) which was recorded on tape. The information from these interviews was used to supplement and bring to life the results from the application of the statistical techniques. As well it helped to illustrate individual differences between and within the groups.

Ethical Safeguards

Some of the information gathered for this study was sensitive and personal, therefore it was necessary that such information be treated with the strictest confidence. The proposal was submitted to the Ethics Review Committee of the Department of Education Administration for approval which was received.

A stratified random sample of 111 names was chosen from lists provided by six of the seven senior high schools in a selected Nova Scotia school district. In addition, another 43 names were selected from that high school that did not initially supply lists. To maintain the confidentiality only the researcher knew the names of the students involved in the study. The names of students and schools were number coded and each case was discussed by number or a pseudonym. No addresses, school names, locations or neighborhoods were used in any of the analyses or reports.

Each student on the original list of 111 students was sent a letter (Appendix 1) briefly outlining the purpose of the study. They were informed how their name was selected, that all information gathered would be treated as confidential and that they would be receiving a telephone call from the researcher asking for their consent to participate. Once consent was given and the student had filled out a questionnaire, the files of those

students agreeing to participate were accessed. Permission to access such files had already been granted by the selected Nova Scotia school district after receiving a copy of the research proposal and accompanying letter (Appendix 1). The procedures for maintaining confidentiality were also explained to each student prior to the administering of the questionnaire and again to those consenting to be interviewed prior to the interview taking place.

Nature of the Study

Statistical procedures used in this study were descriptive as well as exploratory. According to Ary et al. (1985:95) descriptive procedures " are basically methods of handling quantitative information in such a way as to make that information meaningful." Miller and Wilson (1983:30) state,

> description in social science denotes the search for and refinement of useful variables and the specification of associations between them, but stays short of causal explanations and rigorously tested models

Kerlinger (1967:388) says that exploratory analysis intends "to discover significant variables in the field situation, to discover relations among the variables, and to lay the groundwork for later, more systematic and rigorous testing of hypotheses."

Erickson and Nosanchuk (1977:3) distinguish between exploratory and confirmatory techniques. They state,

> Exploratory techniques make it easy to see into the data, to poke around some information in search of ideas about how things work. These procedures can generate the hypotheses which are sometimes taken to be the starting point of the scientific enterprise. Confirmatory techniques are directed to testing these hypotheses once we have them, provided that we also have good data that are relevant to the hypotheses.

The present study was exploratory in the sense that (1) it sought to determine the most significant differences between students who graduated and students who dropped out, (2) it showed which influences were most significantly associated with students who dropped out of school, and (3) it showed which influences were most significantly

associated with students who achieved senior matriculation. It was descriptive because it (1) provided a profile of students who were high school graduates, and (2) it provided a profile of students who dropped out.

Research Problems

The major purpose of the study was addressed through six research problems and their related sub-problems. The following research problems were investigated:

Research problem 1: significant differences in input variables between graduates and dropouts. The first objective of the study was to find which input variables were significantly different between graduates and dropouts. Therefore the following sub-problems were examined in relation to this first objective;

1.1 What are the significant differences in the home environments of graduates and dropouts?

1.2 What are the significant differences in the student characteristics of graduates and dropouts?

Research problem 2: significant differences in the process variables between graduates and dropouts. The second objective of the study was to find which process variables were significantly different between graduates and dropouts. Therefore the following sub-problems were examined in relation to this second objective;

2.1 What are the significant differences in the academic performance between graduates and dropouts?

2.2 What are the significant differences in the school life experiences between graduates and dropouts?

Research problem 3: significant differences in input variables between graduates and dropouts in rural and suburban settings. According to Wendling and Cohen (1981) rural students, despite the fact that they have a lower socioeconomic status and have access to fewer resources do better than urban students. The Institute for Educational Leadership (1986) found that the dropout rates for urban students are twice that of rural

students. Both of these studies point to the importance of comparing graduates and dropouts in rural areas to those in suburban areas in the hope of uncovering information that will benefit all schools. Therefore the third objective of the study was to find which input variables were significantly different between graduates and dropouts in rural and suburban settings. Therefore the following sub-problems were examined in relation to the third objective;

3.1 What are the significant differences in the home environments of graduates and dropouts in rural and suburban settings?

3.2 What are the significant differences in the student characteristics of graduates and dropouts in rural and suburban settings?

Research problem 4: significant differences in process variables between graduates and dropouts in rural and suburban settings. Given the findings of the literature review noted in research problem 3 the fourth objective of the study was to find the significant differences in process variables between graduates and dropouts in rural and suburban settings. Therefore the following sub-problems were examined in relation to the fourth objective;

4.1 What are the significant differences in academic performance between graduates and dropouts in rural and suburban settings?

4.2 What are the significant differences in school life experiences between graduates and dropouts in rural and suburban settings?

Research problem 5: descriptors of students who graduated. The fifth objective of the study was to find the best descriptors of those students who graduated. Therefore the following sub-problems were examined in relation to the fourth objective;

5.1 What are the best input descriptors of students who graduated?

5.2 What are the best process descriptors of students who graduated?

5.3 What are the best environmental descriptors of students who graduated?

Research problem 6: descriptors of students who drop out. The sixth objective of the study was to find the best descriptors of students who dropped out. Therefore the

following sub-problems were examined in relation to the sixth objective;

6.1 What are the best input descriptors of students who dropped out

6.2 What are the best process descriptors of students who dropped out?

6.3 What are the best environmental descriptors of students who dropped out?

The Sample

The stratified random sample for this study was taken from the population of senior high school graduates and dropouts who had attended school in a selected Nova Scotia school district during 1985-86. Seven different senior high schools were involved in the sample. Ninety-five questionnaires were distributed and there were ninety returns for a return rate of 94.7%. The questionnaires were completed at various locations. Twenty eight students completed the questionnaires at technical schools, sixteen completed them at universities, eighteen were completed at student's homes, seventeen were completed at places of employment, nine were completed at former high schools and two were completed at former junior high schools.

Research Methodology

Quantitative and Qualitative Methods

This study used both quantitative and qualitative methods. According to Turner (1981:243) both quantitative and qualitative techniques can be used in a complementary fashion. The use of various measures of the same variables would be a sound way to check the data. Guba and Lincoln state "comparable results from two or more different approaches (triangulation) strengthen the reliability claims of each of the individual approaches."

Part of the quantitative component of the study was conducted by a questionnaire

(Appendix 3) completed by each student in the sample. It was administered in most cases in person by the researcher. In addition demographic and academic information was obtained from the cumulative record cards of each student . The structure and content of the questionnaire and tabulation sheets (Appendix 3), as well as the research design, evolved from the literature review.

The qualitative part of the study was managed by individual semistructured interviews which were tape recorded. A sample of nine dropouts and eight graduates were selected from the major groups being studied. The format of the semistructured interview (Appendix 3) was grounded in appropriate qualitative theory for the administration of such a technique.

Permission and Approval to Conduct Research

Permission to conduct the research was requested of and obtained from the Superintendent of Professional Personnel of the selected Nova Scotia school district The proposed study was submitted to the Ethics Review Committee of the Department of Educational Administration who approved the proposal as well as the instruments to be used.

The researcher indicated to both parties that strict anonymity and confidentiality would be observed. A summary of the study will be given to the selected Nova Scotia school district upon completion.

Data Collection Procedures

As was indicated permission to conduct a study of senior high school students in the selected Nova Scotia school district was received from the Superintendent of Professional Personnel of that district. The principals of all seven senior high schools in the district were then contacted by letter (Appendix 1) in which the study was described. They were also requested to forward to the researcher a list of their graduates of June

1986 and a list of students who dropped out of their school during the 1985-86 academic year. Four schools responded to the initial request and two more forwarded material after a follow up letter (Appendix 1) and phone call to each principal. The seventh school forwarded only a list of graduates so it was decided not to include this school in the sample until it could be visited and a number of dropouts selected.

From these six lists a stratified random sample of 59 graduates and 57 dropouts was selected. Personnel in each of the six schools were contacted by telephone and given the names selected from their lists. They were then requested to supply the names, addresses and telephone numbers listed on the cumulative record card of each student selected. During the last week of October 1986 each of the students selected from the six high schools was sent a letter (Appendix 1). The letter outlined the purpose of the study, stated how their name was selected, assured them of confidentiality and informed them that they would be contacted by the researcher to obtain their permission to participate.

Upon arrival in Nova Scotia each university, technical school and the seven high schools in the district were contacted by the researcher to request suitable space for the administration of the questionnaire and to conduct any possible interviews. In addition, the school that had not forwarded all the information was visited and an additional 23 graduates and 20 dropouts, along with their addresses and phone numbers, were selected. This made a total of 82 graduates and 74 dropouts in the original sample.

The graduates of the sample were contacted first. Of the 82 students called 55 agreed to participate, 13 could not be reached, 6 telephone numbers were no longer in service, 4 were away attending school, and 4 numbers were wrong numbers. The thirteen students who could not be reached were mostly attending school and working part time which made contact difficult over the five week period of the data collection. The wrong numbers could be a result of inaccurate recording but the numbers that were no longer in service probably were due to a move by the family. The distribution of the results of the calls to graduates is represented by Figure 3.1.

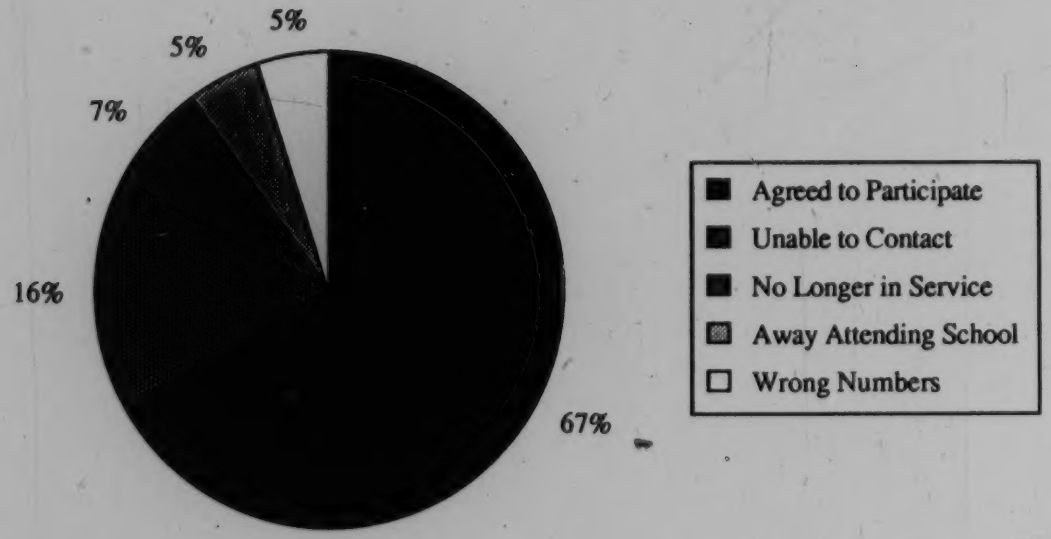

Figure 3.1 Results of Telephone Calls to Graduates in Sample

Arrangements were made to administer the questionnaire in the institution the student was attending or their place of employment if they were working. Those unemployed graduates were asked to come to their former high school to have the questionnaire administered. Requests for interviews were made at the time the questionnaire was administered. Some interviews were done immediately after completion of the questionnaire while others were arranged for a later date. Only 50% of those students consenting to participate kept their appointment at the first university scheduled and only 40% at the first technical school scheduled. As a result for subsequent appointments the student was called a second time the evening prior to the appointment. In addition the students in the technical schools were visited in their classrooms and asked to come to fill out the questionnaire. This increased the turnout to 100% in the technical schools. The extra telephone call increased the university turnout to 82% and 100% respectively of those students who had consented to appointments on successive days.

The graduate portion of the sample yielded 48 completed questionnaires of which 15 were completed at universities, 21 were completed at technical schools, 3 were completed at places of employment, 5 were sent out and returned by mail and 4 were completed at former high schools. This distribution is illustrated by Figure 3.2. Two students failed to fill out questionnaires that were delivered and three students failed to return questionnaires that were mailed out after they did not show up for interviews. Fifty-three questionnaires were distributed and 48 returned for a response rate of 90.57%.

Once the graduate students had completed the questionnaire the 74 names in the dropout group were called. This resulted in the following: 25 students consented to fill out questionnaires, 15 had returned to school, 10 were no longer living at home, four telephone numbers were no longer in service, four numbers were wrong numbers, three numbers had been changed to unlisted numbers, nine students could not be contacted and

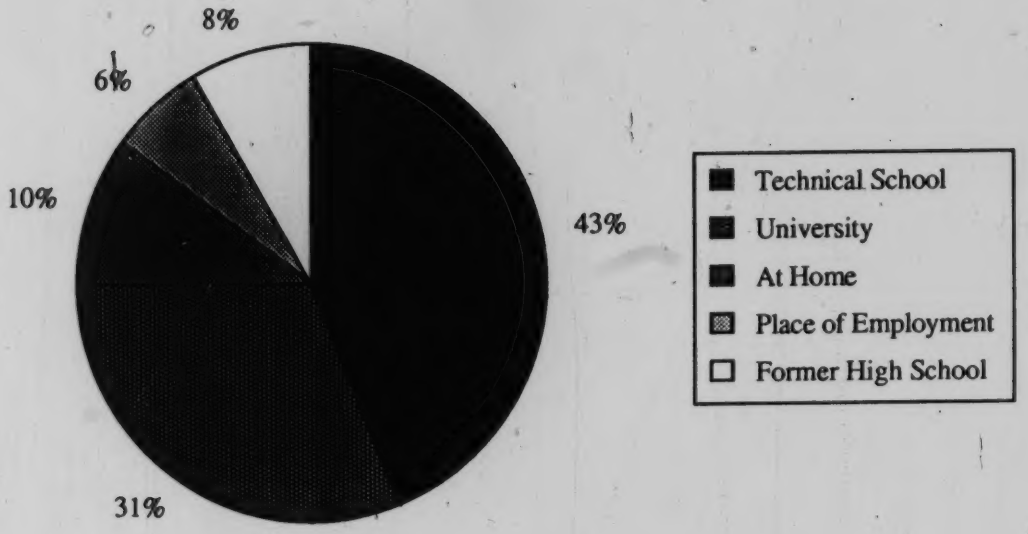

Figure 3.2 Place Where Questionnaire Completed by Graduates

three students said no.

Despite the fact that each student was again called the night before the appointment and again confirmed the appointment not one kept the appointment on the first day. As a result of this experience and the experience with the graduate sample it was decided to schedule appointments only when absolutely necessary or when it could be assured that the student would keep the appointment. As an alternative to the high school the previous elementary school or junior high school was suggested as a place to administer the questionnaire and where relevant the interview. These changes increased the response rate to 50% for those students who had accepted appointments and 100% for those who accepted delivery at their place of employment or residence.

However, the initial contacts and appointments yielded only sixteen completed questionnaires. As a result three of the high schools were again visited and another list of 60 dropouts was compiled. Of these 60, 14 said yes, 14 could not be contacted, seven were no longer living at home, nine were wrong numbers, seven numbers were no longer in service, five had returned to school, one had been changed to an unlisted number, one was deceased, one was suffering from a terminal disease and one said no.

Of the 14 agreeing to participate, four were arranged by appointment and 10 were delivered and picked up within two days. A personal note was attached to each questionnaire giving the approximate time that it would take to fill out the questionnaire, a few simple directions, the time and day that it would be collected and a self addressed envelope. Only two of the four students scheduled for interviews kept the appointment while all the questionnaires that were delivered were returned completed. This yielded a total of 12 questionnaires.

In one of the rural high schools where students did not come in to complete the questionnaire as scheduled a brother or sister was asked to take the questionnaire home and return it to the school when completed. This yielded another two completed questionnaires.

A third list of dropouts was compiled from the only high school remaining where there were some dropouts who had not yet been called. This included 38 names of which 23 were called. Of the twenty-three, 13 could not be contacted, five agreed to participate, two had returned to school, two had wrong numbers and one declined to participate. All five of these questionnaires were delivered and picked up yielding another five completed questionnaires. The changes in the procedures for distribution and the additional sampling yielded a total return of 35 completed questionnaires out of 35 that were distributed. The total distribution for the 156 calls made to dropouts is illustrated in Figure 3.3.

Since the telephone contacts showed that a sizable proportion of dropouts in some schools had returned to school it was decided to try and include in the sample a number of students who had dropped out and later returned to school. Based on the previous experiences, these students could best be obtained at the technical schools. As a result two of the technical schools were again visited and seven students filled out questionnaires. Three of these same students agreed to interviews.

There were a total of 42 dropouts completing questionnaires out of 42 questionnaires distributed for a response rate of 100%. Of these 42 respondents seven were completed at technical schools, 14 were completed at home, 14 were completed at places of employment, five were completed at former high schools and two were completed at former junior highs. Nine of these respondents agreed to be interviewed. The place of completion of the questionnaire for the dropout portion of the sample is shown by Figure 3.4. The combined total of calls for dropouts and graduates was 239. Of the 82 graduates called 48 actually participated. Of the 156 dropouts called 42 participated but seven of these had returned to school.

Once the dropout sample was completed the seven high schools were again visited and the cumulative record cards were selected for each student who had completed a questionnaire. Information was recorded on previously prepared data sheets shown in

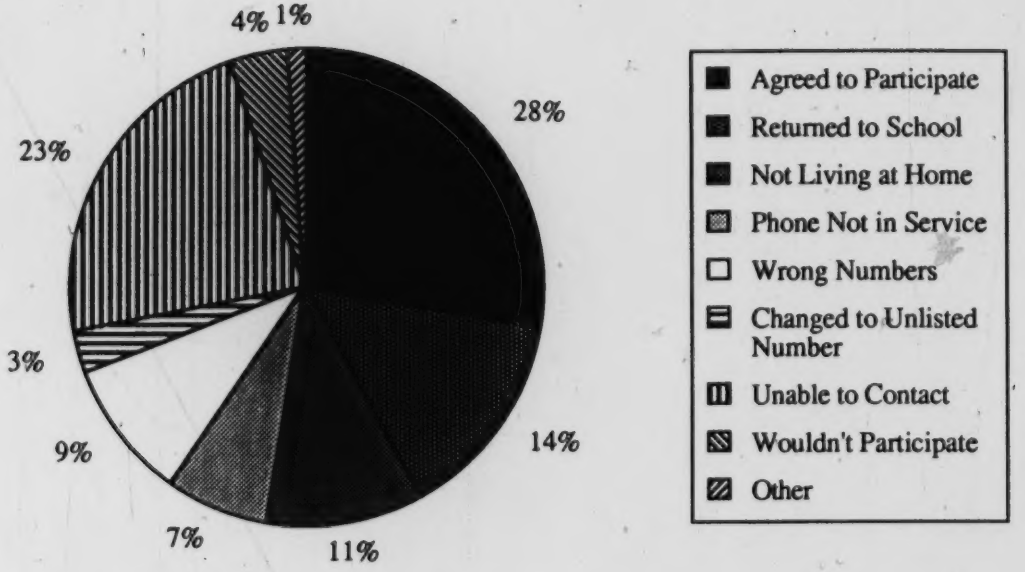

Figure 3.3 Results of Telephone Calls to Dropouts in Sample.

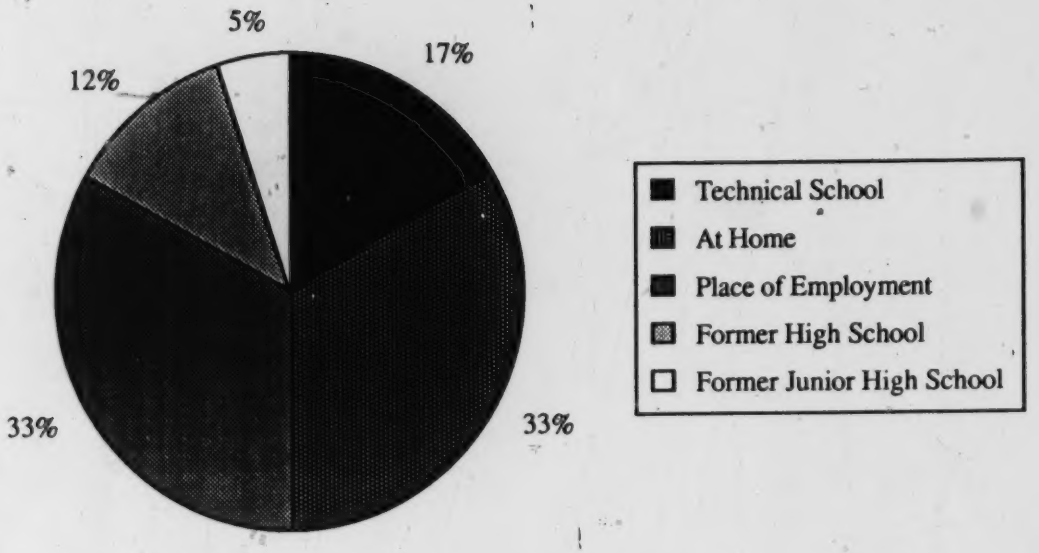

Figure 3.4 Place Where Questionnaire Completed by Dropouts.

Appendix 3. With only a few exceptions I.Q. scores were not provided. Achievement test results were provided according to a standard score along with a percentile rank. All elementary records were anecdotal so elementary school results were not recorded. Notes were made from information in the card where it was felt the information might be relevant to a student's academic performance.

Treatment of the Data

The data from the pre-coded questionnaires were key punched directly from the questionnaire to computer cards. The data from the cumulative record cards and taped interviews were coded after collection and recorded on data sheets. The data were then also key punched to computer cards and verified by a trained key punch operator. The Statistical Package for the Social Sciences Version X was used to analyses the data. The two statistical techniques used to analyze the data were the Chi Square test of Significance and 2-tailed t-tests. A significance level of less than .05 was applied to all statistical techniques used. All programs were provided by the University of Alberta, Department of Computing Services.

The Chi Square test of significance and the t-tests were used to compare the differences between the dropouts and graduates. When the variables were discrete the chi squared was utilized and when they were continuous the t-test was used.

The chi square and the t-tests were also used to examine the differences between graduates and dropouts in the rural and suburban groups. The chi square was again applied when the variables were discrete while the t-test was used for those variables that were continuous.

The qualitative data was also coded but due to the small size of the qualitative sample only the chi square technique was utilized.

Presentation of the Findings

The findings of the data analysis are presented in chapters IV, V, and VI. All variables were grouped according to the categories established in the conceptual framework and are presented in a series of tables. The differences in the inputs between the two major groups are presented in chapter IV while the differences in process variables are presented in chapter V. The differences between the two groups on environmental comparisons are presented in chapter VI. Included in each chapter is a discussion of the findings. All significant differences are described in the text of each chapter.

Research Instrumentation

Data for this study were gathered by means of (1) the questionnaire, (2) the personal interview, and (3) an examination of student records and school district records.

The Questionnaire

The questionnaire consisted of fifty-seven closed response items and two open response items. Because of the personal nature of most of the questions it was decided to intersperse questions of various topics throughout the questionnaire rather than dividing it up into specific sections with each section dealing with a different topic. The one exception was the measure of family home index in which all the items were placed in one section of the questionnaire to decrease response time. Twenty-four items on the Gough Home Index were used to determine one measure of socioeconomic status. The Gough Home Index was selected because (1949:55) "the scale is widely applicable to school children, and will permit an acceptable assessment of the objective status factor." A collapsed seven point version of the Duncan Socioeconomic Index For All Occupations was used to classify the occupational status of the parents of each respondent. It was

selected because (1961:128) the researcher "is at liberty to form class intervals of the index of any degree of coarseness that he wishes." Also the Duncan Index was constructed to obtain (1961:145) the "prestige ratings of occupations." Questions requesting the father's education and employment as well as the mother's education and employment were included on the questionnaire.

Consistent with the suggestions of Ary et al. (1985:345-351) the following were considered in the construction and layout of the questionnaire: (1) the questions had to be arranged in good psychological order, (2) respondents had to be able to complete the questionnaire in twenty minutes or less, (3) an attempt was made to precede more objectionable items with less objectionable items, (4) confidentiality had to be maintained at all times, (5) questions had to be phrased simply and unambiguously, (6) alternatives to each question had to be exhaustive and avoid bias, (7) questions that would have elicited reactions of embarrassment, suspicion, or hostility were to be avoided and (8) the questionnaire had to be laid out in a way that made it attractive, easy to read and complete as well as convenient to code and score.

The various questions developed for the questionnaire entitled "High School Personal Inventory" referred to the background and values of the student while they attended high school. The questions related to (1) socioeconomic status, (2) family background, (3) student values, (4) student locus of control, (5) parental expectations, (6) parental income, (7) parental attitudes, (8) student attitudes, (9) student lifestyle, (10) family lifestyle and (11) parental education. Respondents were ask to select one response from a list of alternatives offered in each question. Respondents were given an opportunity to write in a response for parental occupations which were later coded into one of seven categories.

Semistructured Interview

According to Bogdan and Biklen (1982:135) "an interview is a purposeful

conversation, usually between two people (but sometimes involving more) that is directed by one in order to get information." They state (1982:135),

> in qualitative research, interviews may be used in two ways. Either they may be the dominant strategy for data collection, or they may be employed in conjunction with participant observation, document analysis, or other techniques. In all of these situations the interview is used to gather descriptive data in the subjects own words so that the researcher can develop insights on how subjects interpret some piece of the world.

The subjects of these interviews were former high school students who had been out of school less than a year. In addition these former students were strangers to the researcher and the researcher met most subjects only once. For these reasons it was necessary to select an interview format that would be flexible enough to allow the subjects to tell their story while at the same time structured enough to allow the researcher to make comparisons. For these reasons the semistructured interview format was adopted. According to Bogdan and Biklen (1982:136) "with semistructured interviews you are confident of getting comparable data across subjects." The interview was conducted according to the suggested methods for conducting interviews stated by Ary et al. (1985:343-345)) and Bogdan and Biklen (1982:135-139). Consistent with their approaches an attempt was made to ask the same questions in the same order and in similar language to all subjects due to the need to compare the results. However this format sometimes had to be altered to allow for the ability and perceptiveness of the subject. All subjects were questioned on the same school, family and personal background matters. The questions were general in nature because it was intended that the information gained from the interviews would supplement the more specific information gained from the questionnaires and the school records.

The questioning in the semistructured interview followed three main categories, school life, home life, and background characteristics. In addition, each interview was preceded by a brief introduction in which the purpose of the study was explained and the safeguards for confidentiality were again outlined. Sixteen of the interviews were

recorded on tape and one was transcribed immediately after it took place. The transcription method was used for the one instance because it was the judgment of the researcher that the tape recorder would intimidate the student and make the interview less valuable. This student had some unique characteristics that made it important that he be included in the interview portion of the sample.

School Records

Each student's cumulative record was examined and the following information recorded: (1) sex, (2) date of birth (3) attendance record (4) deportment (5) health record (6) high school track (7) achievement test results (8) grade nine academic record, and (8) senior high academic record.

The attendance recorded was the number of days absent during the last year of each level attained where it was provided. When the last year was not provided the most recent attendance record for that level was used. Deportment and health for each level were recorded by means of a seven point Likert scale. The Likert scale was used because according to Ary et al. (1985:195) "the Likert scale has been one of the most widely and successfully used techniques to measure attitudes." The way the material was presented in the cumulative records made it necessary for the researcher to adopt an attitude on the matter of the students deportment and health so it could be recorded in a way that would allow comparison.

Students were tracked according to a university preparation program or a nonuniversity preparation program. Achievement tests were recorded according to a standard score and a percentile rank. A full record of marks was also transcribed for each student from grade nine until the student finally left school. Elementary records were anecdotal and consequently could not be recorded. Notes were made on matters that might have had a significant effect on a student's achievement.

Staff Interviews

Staff were interviewed when it was necessary to resolve contradictions, inconsistencies or omissions in the data gathered using the other instruments. They sometimes also volunteered additional information which was recorded if it was deemed relevant to the study.

Pilot Testing

According to Ary et al (1985:351) "it is essential that the questionnaire be pretested in order to identify ambiguities, misunderstandings, or other inadequacies." Consistent with their ideas the questionnaire was given to one faculty member and two graduate students to procure their opinions on whether the instrument would obtain the desired data and to elicit any other suggestions they might have for improvement.

Once these suggestions were incorporated the questionnaire was administered to seven undergraduate students. Ary et al. (1985:352) state that a pilot test should answer a number of specific questions,

1. Do the respondents appear to be comfortable with the questionnaire and motivated to complete it?
2. Are certain items confusing?
3. Could some items result in hostility or embarrassment on the part of respondents?
4. Are the instructions clear?
5. How long will it take a respondent to complete the questionnaire?
6. Do all respondents interpret the items in the same way?

With these questions in mind the following changes were made after the pilot test: (1) the questionnaire was shortened from 116 items to 59 items, (2) many questions were rewritten for purposes of simplification and clarity, (3) the questionnaire was reformatted to facilitate and shorten the time needed to respond and to make it more attractive, (4) the directions were rewritten to make them easier to read and understand, and (5) the questionnaire was color coded to allow for better organization in administering and analysis.

The semistructured interview format was pilot tested with one of the undergraduate students who had previously filled out the questionnaire. Some minor changes were made in the semistructured interview format as a result of the pilot test. More emphasis was placed on the home situation of the subject and more time was allocated for information on peer group relationships and student free time outside of school. The time allocated for each interview was set at forty-five minutes to one hour.

Validity

Validity can be generally defined as the degree to which an instrument measures what it purports to measure. Validity was obtained in this study through the pilot test already described. Further, the cumulative record cards of each student and other school district records provided the actual data. Needed information not found in these sources was obtained at the time the questionnaire was administered or through interviews with appropriate staff. Each student was sampled only once with the exception of those students selected for interviews. In addition validity was further assured by a process of triangulation in which the qualitative data was used to check the quantitative data.

Reliability

Ary et al. (1985:225) describe reliability as the degree of consistency with which an instrument measures whatever is being measured by it. The information assembled for the study was taken from standardized records or by means of a questionnaire administered in most cases by the researcher. In cases where the questionnaire could not be administered in person by the researcher directions were given in a short personal handwritten note attached to the questionnaire. Where possible directions were also explained on delivery or over the telephone. The directions on the questionnaire were also structured in a way to allow for completion of the questionnaire without the researcher being present.

Since all students in the sample came from the same system and the questionnaires were easily and quickly completed, and in most cases in the presence of the researcher, information was collected and recorded in a consistent manner. As well fact sheets were prepared to further ensure the accurate and uniform recording of data from the records. If there were doubts about information obtained from the documents an attempt was made to validate it at the time the questionnaire was completed or during the interviews with the staff. A check with school district records showed the sample to be representative of the population on age and achievement test results.

Summary

The research design, research methodology and research instrumentation were outlined in this chapter. Data were collected from ninety respondents who attended one of seven different high schools in a selected school district in Nova Scotia. Data were accumulated by means of a fifty-nine item questionnaire, an examination of each respondents cumulative record card, seventeen semistructured interviews with a select group of the same respondents, a structured interview with each of the seven principals, an examination of pertinent school board records and informal interviews with staff. The statistical techniques used for the data analysis were the Chi Square test of significance and t-tests. The semistructured interviews were also coded and subjected to the appropriate statistical technique. The study was exploratory and descriptive in nature.

Chapter IV

Presentation and Discussion of the Findings Input Variables

This chapter contains the comparisons between graduates and dropouts on selected input variables. This analysis addresses the first research question of the study which is as follows:

(1) What are the significant differences in input variables between graduates and dropouts?

Inputs were considered under two broad headings, Home Environment and Student Characteristics. Home Environment included (1) socioeconomic status, (2) home educational environment, (3) parental characteristics, and (4) the nature of the parent-student relationship. Student characteristics were grouped according to (1) personal characteristics, (2) future expectations, (3) use of free time outside of school, (4) student values, and (5) lifestyle.

The qualitative data contributed to information relevant to most of the variables identified. Integrated with the discussion are appropriate references to the literature review along with comments of the respondents who were interviewed. A presentation and discussion of the findings of the data analysis from the interviews is also presented.

Home Environment

Socioeconomic status

The student's socioeconomic status was estimated by the highest level of father's education, father's occupation, the highest level of mother's education, mother's occupation, and the Gough Home Index Scale (Appendix 4).

As is illustrated in table 4.1, only one of the five socioeconomic status variables, highest level of mother's education, was found to be significantly different between the two groups. The mothers of students who graduated had a higher level of education than

Table 4.1

Differences in Socioeconomic Status Characteristics between Graduates and Dropouts (N=90)

Characteristic	t-test
Home Index Score	0.94
Highest Level of Father's Education	0.66
Father's Occupation	1.49
Highest Level of Mother's Education (1)	2.20*
Mother's Occupation	0.93

Note. The graduates were higher than the dropouts on every s.e.s. measure used in the study.

(1) The mothers of graduates had a significantly higher level of education than the mothers of dropouts.

the mothers of the students who dropped out. Thus most of the indicators of s.e.s. used in this study were not significantly related to student retention in high school. This finding is supported by the findings of Freidman, Glickman, and Utada (1985) who found that mother's education level was a significant predictor of failure to graduate. It is also consistent with the majority of the literature which shows socioeconomic status to be related to student achievement but which also illustrates no real consistency on how those variables which are most significant affect achievement. For example, Porter, Porter and Blishen (1982) argued that school performance was not strongly related to social class. Hanushek (1979) believed that family background made a difference in student achievement. Winkler (1975) argued that the socioeconomic status of the student population affected achievement. Rock et al. (1985) found that the family support variables had an indirect positive effect on achievement working through student behaviors. Bidwell and Kasarda (1975) also argued that the effects of socioeconomic status while positive were indirect. Sampson-Malone (1985) found that different aspects of socioeconomic status influence the achievement of black and white students. Mother's educational level was the strongest predictor for blacks while father's educational level was the strongest for whites. Freidman, Glickman and Utada (1985) asserted that mother's education level and number of family members were significant predictors of failure to graduate.

Disaggregating the data revealed that there was a relationship between socioeconomic status and achievement. However, only one variable mother's education level was found to be significant. It is possible that the positive or negative influences from socioeconomic status could affect the relationship between retention and other inputs like the nature of parent student relationships as well as many of the student characteristics variables.

Home Educational Environment

Five variables were used to measure the quality of the home educational environment. They were parental attendance at parent teacher interviews, the student being read to as a child, the reactions of parents to a good report card, the reactions of parents to a poor report card, and parental assistance with homework.

As shown in Table 4.2 one of the five indicators was found to be significantly related to whether or not students graduated or dropped out. Most interesting was that with dropouts there was a greater frequency of one parent attendance at parent teacher interviews than with students who graduated. The finding that a greater proportion of graduates have both parents attending may be indicative of the unity and depth of commitment of the parents of the graduates to seeing that their children get a good education. These results are consistent with the findings of Harbin-Kemp (1983) and Clarke (1983) who found that the students of parents who were involved did better than those whose parents were not.

The following comment was made by M--- who dropped out of school after failing grade ten. She was asked if her parents wanted to see her get a good education.

> My mother always went to my parent-teacher meetings. My father he's a very quiet person he doesn't like to go around where there are a lot of people or things so he just usually never went but it wasn't like he didn't take an interest in anything I did like he's still got papers that I drew in grade one- grade two like little cards and things like that. ... Oh I was very close to my father when I grew up. I was probably closer to my father than I was my mother cause I went everywhere with my father like I went to all his hockey games and you know we did a lot of things together.

In this situation one parent attended parent-teacher interviews but it was not the parent to whom the student had the closest attachment. The lack of attendance of the father might have been transmitting the wrong signal to the student as to the importance of education and might also have indicated a lack of support for the mother when things became difficult at the junior high and senior high levels. In this situation the commitment of one parent was not enough. It would seem that a united effort on the part of both parents

Table 4.2

Differences in Home Educational Environment between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Parent Attendance at Parent Teacher Interviews (1)	9.03*		0.01
Read to As A Child	1.24		0.27
Reactions of Parents to good Report	2.03		0.36
Reactions of Parents to poor Report	2.95		0.40
Parental Assistance With Homework		0.05	0.96

(1) A significantly larger proportion of dropouts reported one-parent interviews.

from the earliest years could be important.

It was also interesting that there was no significant difference between the two groups on parental assistance with homework. This comment made by T--- who dropped out in grade eleven might help to explain this result. She was asked if her parents made sure she did her homework or if they ever helped her with homework.

> Yeah well Dad would say do your homework and I'd just go in my room and pretend I'd do it and I wouldn't do it. ... sometimes if I wanted them to help me they would.

In both the situation of M--- and T--- the parents of the students concerned wanted them to succeed. Both students had a history of being marginal academically. In both of these situations it was only the mother who was willing to make the extra effort to see that the student was successful. On the matter of homework both groups indicated that they received help with homework but as the comment made by T--- shows in the case of the dropouts it may be that neither the student nor the parent would be likely to initiate such help.

Parental Characteristics

Four descriptions of parental characteristics were used. They were family structure, parental television viewing, language spoken at home, and parental participation in sport. As is shown in Table 4.3 none of the measures of parental characteristics were significantly related to whether a student graduated or dropped out.

These results appear to conflict with the findings of Harbin-Kemp (1983) and her assertion that the research indicates that achievement is related to the family structure and the size of the family as well as other family background variables. However, it could be consistent with her major finding that it is the nature of the involvement of the parent or parents in the educational process that is really important for success not the family structure per se.

These comments were made by C--- who lived with both natural parents but had

Table 4.3

Parental Characteristics
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t test	p
Family Structure	13.24		0.10
Parental Television Viewing		0.35	0.73
Language at Home	3.19		0.36
Parental Participation in Sport	0.71		0.40

Note. None of the measures of parental characteristics were found to be significant.

attended seven different junior high schools.

> I ended up being kicked out of grade seven because I had moved to B--. Because at the end of grade seven I was really having problems with my parents and I was running the roads sort of thing so I never went to school. So they said if I didn't return in five days I would have to show up in court for truancy so my brother who is a teacher he took me in. He figured well it was a different county and I would have to go every day if I went to his school. But they kicked me out for smokin during one of my exams. ... (My parents) they were having financial problems which would come out on me right --- ten minutes late and I would be in trouble sort of thing. ... I failed my final exams (grade 8) because me and my boyfriend broke up and my mind was on something else at the time. ... So I went back for the first day and I told them I couldn't get along with the kids in my class for being so much younger than me sort of thing and I told them I wasn't going to go back to school unless I was in grade nine. So they put me in grade nine but on the condition that I have this one teacher for my homeroom teacher and that's the only way I wanted to go back either because he was a good teacher -- we fought a lot but he managed to help me a lot too ... It went alright but then I moved again ... It was a total difference for me because I was used to taking a bus and going to see a movie and things like that ... wasn't used to one corner that you had to go - no other place and I got really badly into drugs and school didn't mean anything cause I just really couldn't handle living there. And everybody did drugs and everybody drank because they didn't like it there either ... I was used to being busy running around and wasn't used to the people there at all, sort of like one click-I just didn't fit in sort of thing ... I left in January and came up to R---. I lived with my sister. She was my legal guardian. She is still my legal guardian but I am back home.

There can be little doubt that in the situation of C---- the extreme instability of her family background was a major contributing factor to her poor performance in school. Although she desired to be with her parents the nature or quality of the relationship was such that it added little in the way of a supportive educational environment. The family structure here was certainly not an important positive influence on student achievement even though the student lived with both natural parents.

In the sample considered there were very few large families. Only twelve of the students sampled had three or more brothers and sisters. In addition 78% of those students questioned said they were living with both natural parents. The relative stability of the area studied may also explain some of the differences between the study findings and the majority of the literature which reflected the findings of studies that were done for the most part in the major urban centers of the United States. Negative parental

characteristics usually were associated with family structure, more specifically single parent families, which made up a substantial portion of the poorer inner city areas which were included in many of the American studies. Therefore, family structure in those studies may have resulted in a number of positive or negative influences which may have affected retention but they were not a direct cause of graduating or dropping out.

The Nature of the Parent-Student Relationships

The following indicators were used to measure the nature of the parent student relationship: regular chores, participation in leisure activities with parents, attendance at cultural events with parents, the forms of punishment used in the home, the quality of home life, regular allowance, the student's friends being welcome in the home, the parental attitudes towards teenagers, the family gathering daily for a family meal, the student having a curfew during high school years, and the degree of access the student had to an automobile.

As illustrated in Table 4.4 the accessibility to an automobile, attendance at cultural events with parents, regular chores, and participation in leisure activities with parents were all significantly related to whether a student graduated or dropped out. A significantly greater proportion of dropouts than graduates said they never had access to a car. Also a greater proportion of the graduates had attended cultural events with their parents, did regular chores at home and spent more time participating in leisure activities with their parents.

The accessibility to an automobile could be an important indicator of parental interest for the students in this area. More graduates than dropouts had ready access to an automobile. Considering the rural nature of much of the district interested parents may have considered access to an automobile to be very important for the student's overall development. In addition the parents of the graduates might have more resources which would enable them to provide such access more easily.

Table 4.4

The Nature of Parent-Student Relationships Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Accessibility to an Automobile (1)	8.10*		0.04
Attendance at Cultural Events with parents (2)		-2.69**	0.01
Regular Chores (3)		-2.67**	0.01
Participation in Leisure Activities with parents (4)		-2.07*	0.04
Forms of Punishment at Home	3.58		0.31
Quality of Home Life	0.64		0.42
Regular Allowance	0.57		0.45
Student's Friends Welcome in Home	0.39		0.53
Parental Attitudes to Teenagers	0.02		0.99
Daily Family Meal	0.00		1.00
Curfew while in High School	0.00		1.00

table 4.4 continues

(1) Graduates had significantly greater accessibility to an automobile.

(2) Graduates attended significantly more cultural events with their parents.

(3) Graduates did a significantly greater number of chores.

(4) Graduates participated in a significantly greater number of leisure activities with parents.

The results showed there was a difference in the nature of the parental relationship between graduates and dropouts. The parents of graduates spent more time with them in both cultural and other leisure pursuits and encouraged responsibility through the assignment of regular chores. This comment was made by K--- presently a first year university student who described what her family did with some of their leisure time when she was in high school.

> With sports and that - my family's pretty active in sports - and I remember when I used to skate and compete my whole family would go with me and a lot of times when I practiced through junior high especially they used to all come to the rink. I remember that ... and it's the same with my sister and brother, my sister plays basketball and we'd go down and watch her and my brother plays hockey so we'd go down and watch him play hockey.

Consistent with this idea of family support is the necessity for the student to have an adult whom he/she respects and who will exert a positive influence and provide encouragement and structure so necessary for success in school. This comment, made by P---- who dropped out of school in grade ten and then returned to take a course at vocational school, is a good illustration of how the nature of parent student relationships can make a difference. His parents were divorced while he was in elementary school. He was asked if his parents encouraged him to get an education.

> Mum's not all there. She's had mental problems from a way back and she's alright for a couple of months and then she's off her rocker quite a bit so ... My father did because he only went as far as grade nine and he wanted, or grade eight I should say - I think its grade eight and he never went no further than that and he wanted me to do good in school ... I got more further with my father than I did with my mother ... I used to live down home and then I went to live with Dad and it's a good thing I did and he moved in town and I moved in there ... It was a lot easier living with Mum than it was with Dad like Dad would have me every Thursday mowing the lawn, every day washing the dishes, up in the gardens on the weekend, mopping the floors Saturday morning and vacuuming Saturday so I was constantly working - maybe that's what I needed is the discipline. ... my father wanted me to come back so that made it easier.

The experiences of K-- and P-- seem to underline the importance of the student having a sound relationship with at least one parent if he/she is going to be successful in school. It would also appear that it is not enough to simply encourage the student to do

well but the parent must actively encourage those qualities that are necessary for success and provide that structure in which they will develop.

Summation

The study findings showed that the home environment inputs were not strongly related to high school retention. Only one of the socioeconomic indicators, mother's educational level and one of the home educational environment indicators, parental attendance at parent teacher interviews were significantly related to graduating or dropping out. None of the parental characteristics input measures were significant. The nature of the parent student relationships had a stronger relationship to graduating and dropping out than did the other home environment indicators considered. It was important for the student to have a supportive relationship with respect to education with at least one parent and it was also important that that parent become actively involved in providing the structure to encourage those qualities necessary for success.

Student Characteristics

Student characteristics were grouped according to five categories. They were personal characteristics, future expectations, use of free time outside school, values, and lifestyle.

Personal Characteristics

The personal student characteristics recorded were sex, age as of June 30,1986, number of siblings, present marital status, present employment status, the presence of unusual obstacles the student had to overcome, and the student's health in elementary school, junior high school and senior high school. As is shown in Table 4.5, of the nine indicators of personal student characteristics, two were found to be significantly related to

Table 4.5

Personal Student Characteristics
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Sex	00.31		0.58
Age	10.97		0.14
Marital Status	00.00		1.00
Number of Siblings	00.51		0.97
Present Employment Status (1)	35.76**		0.00
Unusual Obstacles to Overcome (2)	6.80**		0.01
Health (Elementary)		-1.65	0.10
Health (Junior High)		-1.71	0.09
Health (Senior High)		-1.75	0.09

(1) Significantly more dropouts were either employed or unemployed compared to graduates who were mostly students in post secondary institutions.

(2) Significantly more dropouts than graduates had unusual obstacles to overcome in order to be successful.

achievement. They were the student's present employment status and the presence of unusual obstacles.

A significantly greater proportion of dropouts, with the exception of the small number who had returned to either vocational school or their former high school, were either employed or unemployed when compared to the graduates. A significantly greater proportion of the graduates were still students. More interesting was the unusual obstacles category. Dropouts had more obstacles to surmount in order to be successful than did the graduates. This finding was consistent with the findings of Jencks (1975) who argued that achievement did not depend on schools but more on the characteristics of the students entering them. The obstacles in this study could have been physical disabilities, personal health problems, severe problems at home or a combination of some or all of them.

A number of the students interviewed indicated severe problems at home. This comment was made by M--- who dropped out in grade ten and who lived with her mother and stepfather. She was asked if there was contact with the home when she got into trouble in school.

> My mother last year spent a lot of time in the hospital and the year before that too. ... She was in in the Summer, and again in October and just after Christmas and then at Easter time so they didn't call home too much during the day ... she is an alcoholic so she is always out somewhere doing something. ... Dad wasn't home too much, he was home for breakfast and supper and that was it. He's always on the go, always working.

A number of the dropouts had other unusual obstacles that were difficult for them to overcome. G--- for example is legally blind and had difficulty reading from the blackboard. However, whenever teachers moved him closer or treated him differently to compensate for his handicap he reacted negatively because he wanted to be like everyone else. D--- had considerable problems with reading in the early grades and needed extra help with it at home. However D---'s mother was deaf and couldn't speak so this obstacle was very difficult to overcome. School records indicated that D--- made a lot of

progress as a result of extra help in elementary school but when the support was pulled away in junior high school he again started to have difficulty. There was also the case of H---- an insulin dependent diabetic who required a very strict diet and who had to eat at very specific times during the day. The records showed that at least two of these students came from backgrounds that were very supportive of education but still the negative influences caused by these obstacles were simply too great to overcome. All three students dropped out.

Future Expectations

Three indicators were used to measure future expectations of the two groups of students. They were the highest level of education the student expected to achieve in ten years, the income the student expected in ten years, and the most important characteristic necessary in a job as considered by the student. As is shown in Table 4.6 all three indicators were found to be significantly related to whether a student graduated or left school. These findings are supported by Wyse (1987) who found that dropouts have low aspirations and low self esteem.

A significantly greater number of graduates expected to have a higher level of education and income. Also those students who were successful tended to view the enjoyment of the work as being most important while dropouts valued security and rapid promotion. These findings showed the importance on retention of the student's aspirations level as well as the values he/she brought to school. Such a marked difference in the two groups may be a result of the dropouts having had to lower their expectations as a result of their history of failure. Also their desire for security and rapid promotion may be due to the insecure position in which they find themselves. The graduates on the other hand may take for granted that their increased education will at least result in their achieving an income that will be acceptable while allowing them to choose the job that they would find most enjoyable.

Table 4.6

Future Expectations of Students
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Highest Level of Education Expected (1)		6.45**	0.00
Future Income Expected (2)		2.64**	0.01
Most Important Characteristic in a Job (3)	14.09**		0.00

(1) A significantly greater proportion of graduates expected to achieve higher levels of education.

(2) A significantly greater proportion of graduates expected to achieve higher levels of income.

(3) A significantly greater number of graduates valued the enjoyment of the work as being most important as opposed to the dropouts who valued security and rapid promotion.

The following comment was made by J--- an "A" student in high school and now a first year university student whose parents tried to push him into taking an electronics course at a vocational school.

> I couldn't have hacked it. I wouldn't have been happy doing -- maybe I could've did well but I don't think I would have enjoyed it. I certainly wouldn't have enjoyed going to work every day doing something that I found boring.

Dropouts on the other hand wanted to see more immediate results for their effort, no doubt in part conditioned by their unpleasant experiences in school. Often all that was necessary to cause the student to make the decision to leave was the assurance of employment. This took the pressure off the student and sometimes the family as well. For example, this comment was made by T-- a grade eleven dropout whose mother always attended parent teacher interviews in elementary and junior high school and seemed to take an interest in her daughter getting an education. She was asked how her parents reacted when she told them she was going to leave school.

> They said get a job and you can leave because Mum said I'm getting sick, she always used to ground me saying I'm getting sick of the school always calling home and saying you're not going and she'd say where do you go when you don't go to school and I'd just go to school but not go to any classes.

Although this student is presently working at a minimum wage job at a fast food outlet, her working has taken a lot of pressure off herself and her family. Her income is low but her life is more pleasant than it was while she was in high school. The fact that this student would go to school and not attend classes also underlines the unpleasantness of the experience for her.

Use of Free Time Outside School

Five measures were used to discover how students used their free time outside of school. They were time spent on homework, the number of organized activities in which the student was involved apart from high school, the number of evenings per week spent

with friends, the time spent watching television, and whether the student had a part time job.

As shown in Table 4.7 both time spent on homework and time spent on organized activities were found to be significantly related to whether or not a student was successful. Also the number of evenings a week spent with friends, while not significantly related to whether a student graduated or dropped out, closely approached significance. Those students who graduated spent more time on their homework and were involved in more organized activities outside of school hours. Also those students who dropped out tended to spend more evenings a week with their friends. These findings are supported by the findings of Newland (1933), Rock et al. (1985), Strother (1986), and Shanahan and Walberg (1985).

The students who were interviewed were asked how they would spend a typical weekend. C--- who was self employed and who dropped out after grade ten answered this way.

> Oh, a typical weekend we just walked the roads and chat with the buddies, have a few beer and that was about it ... I never done homework not on the weekends ... during the week just walkin the roads till 9:00, 10:00, 10:30 at night then go back home and ... get up and come back to school the next morning.

J--- a student who dropped out part way through grade ten and is presently unemployed responded ;

> Well now that ... O.K. well I lived with my boyfriend, I moved out of my sisters house and went to live with my boyfriend so usually we were out drinkin and smokin dope on the weekend ya know, stuff like that,- nothin too excitin.

This can be contrasted with the response of F--- a graduate and first year university student who gave this response to the same question.

> Winter is badminton season. One typical weekend I guess would be gone to a tournament which was Friday night and Saturday. Another one I guess well I did a lot of tutoring on the side so that took up a bit of time, but usually on a Saturday I usually had a girlfriend so we were out Saturday night and Saturday was either jogging or out with the girlfriend. ...

Table 4.7

Student Use of Free Time Outside School
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Time spent on Homework (1)		3.09**	0.00
Organized Activities (2)		3.33**	0.00
Evenings Spent With Friends		-1.87	0.07
Television Viewing on Weekdays		-1.40	0.17
Part Time Job	0.07		0.80

(1) A significantly greater proportion of graduates spent more time on homework than did the dropouts.

(2) A significantly greater proportion of graduates spent more time in organized activities outside of school than did the dropouts.

I enjoyed high school. I really did...

The results showing that graduates spent more time on homework and organized activities while dropouts spent more time with their friends was not really surprising. It may be that the dropouts shy away from any group where they are placed in a situation where they are going to have to compete with others. They might simply want to spend their time with a group where they will be accepted while participating in activities which will not test their abilities and where they will not experience failure. That may provide some explanation for the different patterns in the use of free time.

Values

Seven measures were used to get an indication of the student's values. They were whether or not the student would join in a secret activity if they knew their parents would disapprove, what the student considered to be the most important characteristic necessary for success, their attitude towards church, whether they would hand in an assignment done by a friend as their own, what they would do with money they had found in their school, what they thought their years spent in high school should have given them, and the most important thing they strived for in high school.

As is shown in Table 4.8 three of these measures were found to be significant. They were the joining in a secret activity even if parents disapproved, the most important characteristic necessary for success, and what the years spent in high school should have given them. A significantly greater number of dropouts said they would join in a secret activity even if they knew their parents would disapprove. Those students who had graduated placed greater value on personality, academic achievement and friendliness as opposed to dropouts who valued money as the most important ingredient necessary for success. Also a greater number of graduates said that their high school years should have given them a broad education. Those students who dropped out felt that their high school years should have given them vocational training.

Table 4.8

Student Values
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	p
Secret Activity that Parents would Disapprove (1)	5.15*	0.02
Characteristic Deemed Necessary for Success (2)	9.41*	0.02
What Years Spent in High School Given Them (3)	11.16*	0.05
Attitude Towards Church	06.29	0.10
Handing in Another's Assignment as Their Own	01.28	0.26
Money Found in School	01.25	0.26
Thing Strived For Most in High School	04.21	0.38

(1) A significantly greater proportion of dropouts said they would take part in a secret activity even if they knew their parents did not approve.

(2) A significantly greater proportion of graduates favored personality, academic achievement, and friendliness as most important for success as opposed to graduates who said money was most important.

(3) A significantly greater proportion of graduates said their high school years should have given them a broad education as compared to dropouts who named vocational training.

The finding that dropouts would more likely engage in an activity that they knew their parents would not approve may again underline the difference in the nature of the relationship that they have with their parents compared to the graduates. The graduates would seem to have a greater loyalty or bond to their parents. The differences between the two groups on what they thought was most important for success may reflect the self confidence of the graduates about the future on the one hand and the anxiety of the dropouts on the other. The fact that the graduates favour personality, academic achievement, and friendliness as most important as opposed to the dropouts who favour money may be indicative of the feelings on the part of the graduates that they will always have enough money to take care of their needs. The dropouts on the other hand may worry that they might not do well enough economically to be able to enjoy the future. Their family background and their history of failure may also have conditioned them to think more about the present.

Part of the reason for the differences in values between the two groups may be found in this comment by N--- who dropped out in grade ten and whose father was a chronic alcoholic. N-- had tried to return to school twice with the same result each time.

> In those years I just realized that I was a downright idiot, that an education was important so I come back to really buckle down and get the grade 12 piece of paper and then things just didn't work out. I had to support Mum and Dad and stuff and he was sick ... Mum and Dad are, mainly Dad, I had to keep the business going a little bit so ...

This kind of circumstance may produce different needs and a different kind of bond which would condition a student's values. Such a finding would be supported by Wyse (1987) who asserted that there were different classifications of dropouts one of which was the family supporter. M--- who also came from a multi-problem family and who dropped out in grade ten made this comment about her years in high school.

> I can't handle high school. I'm not learning what I want to learn. I don't care about half the stuff I was learning. I want to study something that's going to get me somewhere and I want to get somewhere now not ten years from now.

M---'s impatience may have been reflecting her need to get out of a very unpleasant home situation and a negative parental relationship. Since she could not see school helping her to improve her present situation she saw little sense in continuing especially if that experience was also unpleasant.

Lifestyles

Four measures were used to detect differences in lifestyle between the two groups. As shown in Table 4.9 cigarette smoking, alcohol use, drug use, and eating habits were all found to be significantly related to whether a student dropped out or graduated. A significantly greater number of those students who dropped out used cigarettes, drugs, and alcohol on a regular basis. In addition those students who dropped out had a poorer diet than those students who were successful.

These findings showed the major differences in lifestyle between the two groups. However, these differences in lifestyle must be viewed as one cluster of negative or positive influences being exerted on the student. These influences could be critical in the case of some students and may serve to magnify other negative influences. The following comment was made by C--- a student who attended eleven different schools between primary and grade nine and who subsequently dropped out in grade ten. She was asked why she became heavily involved in drugs.

> Home problems, school problems, ye know ... my parents they're strange people and they always seem like what their world was different from the outside world and I couldn't comprehend which one was real so I just made up one of my own sort of thing.

C---'s experience with drugs seemed to be a product of other negative influences in her background and was a means of her trying to escape them. Such a result is supported by Freidman, Glickman, and Utada (1985) who argued that dissatisfaction with school leads to both drug use and dropping out. The lack of a positive influence provided little help or reason to resist. This can be contrasted with the experience of W-- a graduate

Table 4.9

Student Lifestyles
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Cigarette Smoking	18.19**		0.00
Drug Use		3.20**	0.00
Alcohol Use	9.01**		0.01
Eating Habits		2.60**	0.01

Note. A significantly greater proportion of dropouts used tobacco, drugs and alcohol on a regular basis and had poorer diets.

who was a star junior hockey player and who came from a stable family background. W-- was discussing the reasons for his poor performance in grade eleven which he felt almost ruined his life. He said,

> It was in September ... and ... I was doing drugs about three times a day and I just said that I had to stop so the school offers a drug councillor so I got an appointment with him and September 17th I think in Grade 11 and I haven't touched it ever since. ... I was always tired. ... Yeah .... I was tired. ... I was looking for friends ... my parents - they never really knew until, not the Summer that just past but two years ago I had told them all about it. They were disappointed but they were glad I told them in the end. They wished I had told them when I was really into the habit. They would have liked to help me along but at that time I just couldn't tell them cause I knew it would disappoint them so much.

These two experiences show success or failure is the result of a complex mixture of negative and positive influences. For some students a positive factor like high ability may be enough to counter any negative influence. For marginal students like C-- or W--- a stable family background might be the deciding factor. The findings showed that the differences in lifestyle could be the critical factor for some students in determining whether they drop out or remain in school.

Summation

The student characteristics indicators showed a stronger relationship to graduating and dropping out than did the home environment inputs. All of the indicators of a student's future expectations and lifestyle had a very strong relationship to a student's dropping out or remaining in school. Also a student's values and their use of free time were related to retention but to a lesser extent. The presence of unusual obstacles and the students present employment status were the only measures of the student's personal characteristics found to be related to a students graduating or dropping out. On the measures of the student's use of free time, the time spent on homework, the time spent on organized activities and the number of evenings spent with friends were found to be important. On the student values indicators the joining in a secret activity, the most

important characteristics necessary for success and what the years spent in high school should have given them were important.

Between Group Differences
Personal Interviews

The personal interview data were also grouped according to inputs. The two categories of inputs were the student's home environment and the personal characteristics of the student. All variables were coded using a seven point Likert scale. The score on the scale for each item was determined by the impression of the researcher. The impressions resulted from the information communicated to the researcher by each subject during the course of the interview.

Home Environment

Four variables were used to try and determine any differences in the home environments of graduates and dropouts. They were the quality of home life while in elementary school, the quality of home life while in junior high, the quality of home life while in senior high, and the parental expectations for education.

As shown in Table 4.10 home life while in elementary school, home life while in junior high, and parental expectations for education were all significantly related to whether the student graduated or dropped out. The quality of the home life of the graduates was perceived better than the quality of the home life of the dropouts in both elementary and junior high school. Also the parental expectations for education were higher for the parents of the graduates than for the parents of the dropouts. These findings are consistent with the findings of Hanushek (1979), Jencks (1975), Sampson-Malone (1985), Harbin-Kemp (1983), Clarke (1983), Marjoribanks and Walberg (1976),Strother (1986) and Wyse (1987).

The families of those students who dropped out had more severe problems while

Table 4.10

Home Environment of Student's Interviewed
Differences between Graduates and Dropouts (N=17)

Characteristic	t-test	p
Home Life - Elementary (1)	-2.89**	0.01
Parental Expectations for Education (2)	-3.23**	0.01
Home Life - Junior High (1)	-2.10*	0.05
Home Life - Senior High	-0.81	0.43

(1) A significantly greater proportion of graduates said they had a good quality home life while in elementary and junior high school.

(2) A significantly greater proportion of graduates said their parents had high expectations for education.

the student was in elementary and junior high school. The expectations of the parents of graduates were also more specific for them than were the expectations of the parents of the students who dropped out. The strongest relationship between family problems and retention seemed to occur when the family problems were protracted and began when the students were younger. Where the problems were not protracted and occurred when the student was older (high school or later) the relationship of this variable to retention did not appear to be as strong. For example P--- a first year university student described the effect of her home situation on her grade eleven performance.

> My courses started to fall a lot. I was having a lot of difficulty with skating that year. I don't know if that would have contributed to my marks - I'd say it probably did - I wasn't working as hard ... not at all. I don't know it might have been because of my home life, it might have been. I don't remember saying then because of this or because of that but now that I think about it- there was some disruption ... Yeah ..... Yeah!

This also seemed to be consistent with the situation of D--- who is now in his first year of university as well. He was asked to describe the effect that his parents divorce, while he was in grade eleven, had on his academic performance.

> I'm not too sure. It didn't really bother me that much because they weren't far away. I had access to either one. My marks stayed generally the same. Some went up and some went down. That's to be expected.

The recollection of T-- of a similar experience while in elementary school is markedly different. This instability in his family background continued through all his school years. He described the following as his first recollection of school.

> I can't remember any thing until grade three. ... Grade three ... I failed grade three that's why I remember grade three, I failed grade three. And Mum and Dad were going through, well Mum had a lot of headaches and stuff so I went to live with my brother and I went down to T-- and I came back for grade four. ... I wasn't too pleased ... but then again I was only in grade three so it kinda goes by ...

The contrast in the comments of the two groups concerning parental expectation for education also tended to support the quantitative findings of the study regarding parental expectations for education. The following comment was made by S-- who was asked

how her parents would have reacted if she had told them that she wanted to leave school in grade nine.

> They wanted us to get through high school and they wanted us to get a trade or some degree at a university, like they wanted to have something under our belts. I think I did say that in grade nine. They weren't going to let me. They just wouldn't let us.

S---'s remarks can be contrasted with the remarks of M-- who dropped out in grade ten. M--was asked if her parents had any expectations for her as far as education was concerned.

> Not really. My mother always went to my parent teacher meetings. ... They pretty well left it up to me.

Personal Characteristics of the Student

Six variables were measured to detect differences in personal characteristics between the graduates and the dropouts interviewed. They were emotional stability of the student, the student's self image, the student's attitude in elementary, junior high and senior high, and the student's physical appearance. As illustrated in table 4.11 emotional stability, self image, attitude in junior high, and attitude in senior high were all significantly related to whether a student graduated or dropped out. The graduates who were interviewed were more emotionally stable and had a better self image than the dropouts who were interviewed. Also the attitudes of the graduates while in junior and senior high were more positive when compared to the dropouts. These findings are supported by the findings of Newland (1933), Pittman (1986) and Strother (1986).

The relatively poor emotional stability of the dropouts when compared to the graduates could be related to the findings regarding the poor quality of their family backgrounds over a prolonged period. The poor self image, relatively poor physical appearance and generally poor attitude towards school of the dropouts could be partly a product of their continued failure in school as well as their unpleasant experiences outside school. J--- who dropped out of school in grade ten related the following incident that

Table 4.11

Personal Characteristics of Student's Interviewed Differences between Graduates and Dropouts (N=17)

Characteristic	t-test	p
Emotional Stability (1)	-3.04**	0.01
Self Image (2)	-3.02**	0.01
Attitude (Junior High) (3)	-2.39*	0.03
Attitude (Senior High) (3)	-2.32*	0.04
Physical Appearance	-1.85	0.09
Attitude (Elementary)	-1.58	0.13

(1) A significantly greater proportion of graduates were more emotionally stable.

(2) A significantly greater proportion of graduates had a more positive self image.

(3) A significantly greater proportion of graduates had a more positive attitude towards both their junior high school and senior high school experiences.

took place in junior high school. Her history of poor deportment in junior high school had caused her parents to move her to a private school in grade eight, a move she was quite positive about at the time. The incident she described is a good illustration of the type of attitude displayed by many of the dropouts towards school and teachers as well as a lack of self control displayed by some of the students in this group.

> My English teacher started putting down public schools. ... so I was getting really mad and I stood up in the middle of the class and I told her off and she sent me to the office ... I told her off when she sent me to the office and the principal told me, started yelling at me, and I told her off (too) and I just walked out and they sent me a letter home saying I wasn't allowed back at that school.

M---'s comment can be contrasted with this comment by F-- who related his general feelings about moving to senior high school.

> I had heard a lot of negative things about it. What with everybody, with the drugs and the smoking all around and people they refer to as slugs. You know. But I just felt whatever you put into it you get out of it. ... in grade eleven and grade twelve I was on the student council ... and as far as the principal and vice principal, they were just great I thought.

Summation

The qualitative material for the home environment inputs revealed a number of variables that were related to graduating and dropping out. The home environment comparisons showed that the student's home life in elementary, the parental expectations for education and the home life in junior high school were all significantly related to high school achievement. The comparisons of the student's personal characteristics showed that the student's emotional stability, self image, attitude in junior high school and attitude in senior high school were significantly related to retention. The qualitative data indicated that there was a relationship between the home environment and retention and part of that relationship may be more indirect and act through a student's personal characteristics.

Summary

In this chapter a number of input variables were used to compare the group of graduates to the group of dropouts. Also presented in this chapter was a discussion of the findings related to the input variables. Integrated with the discussion were supportive references from the literature and selected quotations from the taped interviews. A discussion of the data analysis from the taped interviews was also presented.

Several of the home environment indicators were strongly related to graduating or dropping out. Of those indicators that showed a significant relationship the measures of the nature of the parent student relationship were the strongest. However, the qualitative material showed that the relationship between the student's home environment and retention may be more substantial than was indicated by the analysis of the quantitative data. Most important for the student was having a relationship with at least one parent which was supportive of education and which provided the structure to develop those qualities necessary for success.

The student characteristic indicators showed a stronger relationship to graduating or dropping out than did the home environment inputs. The students future expectations and lifestyle were most important but values, the use of free time, and the presence of unusual obstacles also showed a strong relationship to graduating and dropping out. Most of the indicators showing a significant relationship to high school retention were within the power of parents to control. For example parents can influence the amount of time spent on homework and organized activities as well as some of the lifestyle variables. These findings support the assertion that the relationship of the home environment to retention is a strong relationship.

The analysis of the student interview data showed the home environment variables and the student's personal characteristics to be significantly different for the two groups. The integration of the data from the taped interviews with the quantitative findings

revealed that high school graduation or dropping out was the result of an interaction of a complex mixture of negative and positive influences. Also the inputs that were most strongly influential appeared to be those that were closely associated with the characteristics of the individual student and the type of relationship the student had with their parents.

Chapter V

Presentation and Discussion of the Findings Process Variables

This chapter contains the comparisons between graduates and dropouts on selected process variables. This analysis addresses the second research question of the study which is as follows:

(2) What are the significant differences in process variables between graduates and dropouts?

Process variables were grouped according to Academic Performance and School Life Experiences. The two groups of academic performance indicators considered were student achievement test results administered while in grade nine and the student's academic performance as judged by their final grades during the same year. School Life Experiences comprised social integration at school, attendance, deportment, and times late, school attitudes, general school history, peer group relationships, and influences on the student.

The qualitative data contributed to information relevant to most of the variables identified. Integrated with the discussion are appropriate references to the literature review along with comments of the respondents who were interviewed. A presentation and discussion of the findings of the data analysis from the interviews is also presented.

Academic Performance

Two groups of indicators of academic performance were used. They were the student's ability as determined by his/her results on the Nova Scotia Tests of Basic Achievement and the students' academic performance as determined by their marks on the grade nine basic program.

Achievement Test Results

According to the Guide to the Nova Scotia Achievement Tests Level 9 (1984:1)

> The Nova Scotia Achievement Tests, Level 9, are a series of tests measuring knowledge and the ability to use knowledge in each of seven subject areas. They are designed to indicate the general level of achievement in these areas for the province as a whole and to provide districts and schools with information on the achievement of their own students.

Students in grade nine were tested in English expression, mathematics computation, social studies, science, mathematics basic concepts, reading, and mechanics of writing. As is illustrated by Table 5.1 the students who eventually graduated scored significantly higher on every test when compared to the students who dropped out. These results are supported by the findings of Strother (1986), Rock et al. (1985), Stewart (1983) and Newland (1933). Such results also show that the overall input-output literature on student achievement applies whether the measure of output is achievement test performance or high school retention.

The results clearly indicate the vast differences "in knowledge and the ability to use knowledge" possessed by the two groups. The dropouts are far behind the graduates in the concepts mastered and their ability to apply them. These gaps in knowledge would have a detrimental affect on the student's academic performance and thus add to the feeling of failure possessed by dropouts. As other findings in this study showed the poor performance could be due to such factors as a history of poor attendance, physical disabilities, and protracted home problems.

Grade Nine Basic Program

The grade nine subjects used to measure academic performance on the grade nine program were English, mathematics, science, geography, history, social studies, French, physical education, industrial arts and home economics. As shown in Table 5.2, there

Table 5.1

Achievement Tests Results
Differences between Graduates and Dropouts (N=64)

Characteristic	t value	p
English Expression	3.74**	0.00
Math Computation	2.39*	0.02
Social Studies	3.64**	0.00
Science	4.05**	0.00
Math Basic Concepts	3.74**	0.00
Reading	3.34**	0.00
Mechanics of Writing	2.70**	0.01

Note. The mean score of graduates was significantly higher on every achievement test.

Table 5.2

Grade IX Academic Results
Differences between Graduates and Dropouts

Subject	N	t-test	p
English	87	4.51**	0.00
Math	86	2.39*	0.02
Science	85	3.51**	0.00
Geography	39	2.54*	0.02
History	39	1.71	0.10
Social Studies	83	3.98**	0.00
French	66	4.78**	0.00
Physical Education	82	4.19**	0.00
Industrial Arts	42	3.07**	0.00
Home Economics	37	4.96**	0.00

Note. A significantly greater proportion of graduates did better in every subject area measured except history.

was a significant difference in the mean scores on academic performance between graduates and dropouts in every subject area except history, where there was no significant difference. Graduates did significantly better than the dropouts in all subjects except history.

These findings are consistent with the findings of Rock et al. (1985), Strother (1986), and Freidman, Glickman and Utada (1985) who all found that graduating or dropping out was related to academic performance in school. The results are also consistent with the other measures of cognitive influence, the achievement tests results. However, because the achievement tests are only taken once every three years, they would not be as important as the student's regular academic performance for instilling feelings of success or failure. These academic results show that these feelings of success or failure would be reinforced on a regular basis and probably contribute to the process of dropping out or graduating. If the main objective of school is to succeed academically then a student who is repeatedly failing will see little reason to remain. This comment was made by T---- who left school part way through grade eleven.

> Grade ten was O.K. I was nervous. It was different. There was an awful lot of people I didn't know. ... I liked it except I was always in study hall for failing. I found the work hard like biology and math, I found I didn't get enough math. I did my homework until grade eleven then I just didn't care any more. ... I gave up.

Summation

All the measures of academic performance with the exception of the grade nine history result on the basic program had a significant relationship to graduating and dropping out. Graduates did better than the dropouts on every measure of academic performance. However, the differences in the result for grade nine history was not significant. Those students who graduate have a history of academic success while the dropouts have experienced consistent failure.

School Life Experiences

The following clusters of school life experiences were considered: attendance deportment and times late, attitude towards school, general school history, peer group relationships, and influences on the student.

Attendance, Deportment and Times Late

In addition to the previous measures the students' attendance, deportment history and frequency of lateness were also examined. Six indicators were used to attempt to detect differences between the two groups. They were days absent (elementary), days absent (junior high), days absent (senior high), deportment (elementary), deportment (junior high), deportment (senior high) and the frequency of lateness in junior high. Deportment referred to the general behavior of the student at each level of schooling as determined by notations made on the cumulative record. Such notations were coded using a seven point Likert scale.

As illustrated in Table 5.3, days absent in junior high and days absent in senior high as well as deportment in junior high, deportment in senior high and times late in junior high were all found to be significantly related to graduating or dropping out. It was also observed that while days absent (elementary) was not significant it closely approached significance. Among the six indicators, only deportment (elementary) was not significantly related to success or failure.

Students who dropped out had missed a significantly greater amount of time in both junior high and senior high when compared to the group who had graduated. Their general deportment was also significantly less acceptable than the graduates at both the junior and senior high school levels. They were also late more often for school. These results are supported by the findings of Strother (1986), Pittman (1986), Rock et al. (1985), and Barth (1984).

Table 5.3

Student Days Absent, Deportment and Times Late Differences between Graduates and Dropouts

Characteristic	N	t-test	p
Days Absent (Elementary)	68	-1.89	0.07
Days Absent (Junior High) (1)	75	-2.89**	0.01
Days Absent (Senior High) (1)	77	-4.67**	0.00
Deportment (Elementary)	79	-0.80	0.42
Deportment (Junior High) (2)	80	-3.05**	0.00
Deportment (Senior High) (2)	77	-3.56**	0.00
Times Late (3)	90	2.21*	0.03

(1) A significantly greater proportion of dropouts had poorer attendance in both junior high and senior high.

(2) A significantly greater proportion of dropouts had poorer deportment in both junior high and senior high.

(3) A significantly greater proportion of dropouts were more frequently late for school.

The consistent history of poor attendance on the part of the students who dropped out could be one of the main factors that leads to their poor performance on the achievement tests and their poorer academic performance. However, this poorer performance does not lead to worsening deportment until the junior high school years. It could be that the results of previous absences are not fully realized until compounded by the additional problems of adolescence. The students lack of integration becomes more noticeable with the increasing demands of the junior high school and results in more alienation at the senior high school level. One example of the relationship of lateness to poor attendance and the process of dropping out was illustrated in these comments by O-- - a dropout in grade twelve.

> Grade ten I failed two, grade eleven I failed two. ... It was in grade twelve that I decided to dropout because everybody was graduating and I had no chance of graduating. I wasn't doing good and I was missing too much time so I decided to quit. Right after Christmas I quit high school. ... I was skipping classes ... I had just got a part time job then and I was tired out from working and going to school too so I would sign in late and then I would get hassles from the principal and that, so to avoid the hassle I'd just stay home and then eventually I was kicked out for missing time and I went back and I was kicked out again ... so I knew as soon as I walked out of school I had a full time job.

It was also noticeable in most cases that the deportment of the student improved while the attendance decreased just prior to dropping out. This could be indicative of the student having reached a decision about school and becoming resigned to his/her failure. The differences in attendance patterns may also be another indication of the differences in the nature of the parent-student relationship between the two groups. The parents of graduates may monitor their attendance more closely.

The fact that there was no significant difference in deportment at the elementary school was also interesting. It may be that the results of the deficiencies in knowledge do not lead to a full feeling of failure until the higher levels. It might also mean that the failure of students is better dealt with at the elementary school level where a different

relationship with teachers is possible and the student relationships with their peers are more cohesive.

Student Attitudes towards School

Five measures were used to detect the differences in attitudes towards school between the two groups. They were attitudes towards teachers, feelings on leaving, opinions on major problems at their school, how each student would like to be remembered, and the subjects they preferred. As shown in Table 5.4, their attitudes towards teachers and the students feeling on leaving were both found to be significantly different between the groups. These findings are supported in part by the findings of Freisen (1967), Rock et al. (1985), Pittman (1986), Strother (1986), and Wyse (1987) who found that dropouts displayed a more negative attitude toward school and especially toward teachers. A significantly greater proportion of graduates had a more positive remembrance of their teachers than did the dropouts. Also the graduates had a more positive recollection of their feelings on leaving high school.

The differences in the feelings of the two groups on leaving are not surprising given the different circumstances under which the two groups left school. However, the differences in attitudes of the two groups towards teachers is probably the result of their being able or not being able to meet the objectives of what was being taught and the relationships between them and their teachers that evolved as a result.

The following comment was made by T--- a student who left part way through grade eleven. She was asked why she left.

> I didn't want to go because I hated being there. The students - I hated - the R--- students thought they were so good and they thought they were better than everybody else and they got these little gangs and ... and the teachers ... I don't miss the school. I miss my friends.

T---'s comment can be contrasted with this comment by S--- who described his senior high school experience this way.

Table 5.4

Student Attitudes Towards School
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	p
Attitudes Toward Teachers (1)	10.88**	0.00
Feelings on Leaving (2)	18.30**	0.01
Opinions on Major Problems	6.13	0.19
Like to be Remembered	2.96	0.40
Subject Preferred	4.16	0.53

(1) A significantly greater proportion of graduates had a more positive attitude towards their teachers.

(2) A significantly greater proportion of graduates had a more positive feeling on leaving high school.

> I always liked that school. A lot of people say its a dump. But I always liked it. Its so friendly and you knew everybody. In the first month you knew all the faces ... and the teachers, all the teachers I had were great.

General School History

Fifteen indicators were used to compare the general school history of the two groups. They were the track in which the student was placed in high school, extracurricular participation, whether the student had a history of learning problems, general high school experiences, the number of grades the student repeated, whether the student had been referred for help, whether or not the student was elected to any school position, whether the student had received any academic awards, whether the student had ever been expelled, most frequent form of punishment used at school, whether the student had ever been suspended, the number of transfers (elementary), the number of transfers (junior high), the number of transfers (senior high), and whether the student had been placed in a special program in high school.

As shown in Table 5.5 the track in which the student was placed, extracurricular participation, the history of learning problems, the general high school experiences, the number of grades repeated, referrals for help and the most frequent form of punishment used at school were all found to be significantly related to whether a student graduated or dropped out. A significantly greater proportion of dropouts were enrolled in the Nonuniversity Preparation program as opposed to the University Preparation Program. As well dropouts experienced a significantly greater number of learning difficulties, were referred for help more often and repeated more grades than the students that graduated. There was also a marked difference in the academic awards received and the number of expulsions between the two groups. These results are supported by the findings of Strother (1986), Pittman (1986), Rock et al. (1985), Beiker and Anschel (1973), Dar and Resh (1986), Winkler (1975), and Wyse (1987). Also extracurricular participation, general high school experiences and, the most frequent form of punishment used at

Table 5.5

General School History
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	t-test	p
Tracking (U.P. N.U.P.) (1)	14.21**		0.00
Extracurricular Participation (2)		4.41**	0.00
Learning Problems (3)	8.21**		0.00
General High School Experiences (4)	12.24**		0.00
Grades Repeated (5)	11.92**		0.01
Referred for Help (6)	4.13**		0.04
Elected to School Position	3.04		0.08
Academic Awards	2.85		0.09
Expulsion	2.82		0.09
Most Frequent Form of Punishment (7)	18.16**		0.00
Suspensions	0.96		0.33
Transfers Elementary	1.38		0.71
Transfers Junior High	2.64		0.62
Transfers Senior High	0.90		0.82
Special Program (High School)	0.00		1.00

(1) A significantly greater proportion of graduates were in the U.P. track as opposed to dropouts who were mostly in the N.U.P. track.

(2) A significantly greater proportion of graduates participated more in extracurriculars.

(3) A significantly greater proportion of dropouts had some history of learning problems.

table 5.5 continues

(4) A significantly greater proportion of graduates had a more satisfactory high school experience.

(5) A significantly greater proportion of dropouts had repeated grades.

(6) A significantly greater proportion of dropouts had been referred for help.

(7) A significantly greater proportion of dropouts suffered more severe forms of punishment.

school were all significantly related to whether a student graduated or dropped out. In addition, even though the student's election to a school position seemed related to achievement this relationship did not quite reach statistical significance. The graduates participation in extracurricular activities, the less severe forms of punishment they had to experience and their tendency to be elected to school position illustrates a more pleasant school experience for them as compared to the students who dropped out. This is confirmed by the very significant difference in the general high school experiences of the two groups. These results are supported by the findings of Freisen (1967), Rock et al. (1985), Pallas (1984), Pittman (1986), Strother (1986) and Wyse (1987) who all found that at risk students had more unpleasant school experiences when contrasted with those who were successful.

The students who were interviewed gave some good illustrations of how their school history was related to their success or failure. During the course of each interview the students were asked to try and remember something about each year they spent in school. H--- had been referred for help with reading in elementary and had been tested on a number of occasions. He also repeated grade three. H--- dropped out while in the N.U.P. program in grade eleven and related the following about his grade nine experience.

> Grade nine. Oh, Grade nine! I went down to that ... that ... that ... that slow class. That was - I didn't like it, not one bit. I didn't like it one bit. It helped me a lot. It did a lot for me but it made it that much difficult just to get back into grade ten. ... But its hard when you're in that one class all day and then you're back out into the regular routine. Its really difficult to get back into it. You're used to sitting all day whatever. ... Well I took it. I accepted it fine. There was nothing else I could do I guess. ... You're there.

However, some students don't take such moves positively. The labelling that takes place and the resultant decrease in their self esteem may be the final blow that causes some students to leave school altogether. The following comment was made by a student

who dropped out in grade ten and helps to illustrate how tracking can have a significant impact on retention.

> A friend of mine her name is G----. It's a shame. She's like 16 - and she dropped out - well she didn't drop out of school - she got kicked out - they put her in the well they call it the "crayon gang" up at school, the A.P class - she had a - like eighties and nineties in grade seven and I - like the girl had smarts and she is not stupid and she just - like that - she didn't go to school any more like she missed months at a time just take off school right, and she failed grade eight twice right - she was going on her third year so they put her up here into the --- she could get a year or two in one year something like that and they kicked her out of school finally ...

The dropouts' history of learning problems, grades repeated and referrals for help illustrated a consistent history of failure for this group. Their learning difficulties are probably what lead to their being placed in the N.U.P. track in high school in the hopes of retaining them in school. The fact that most of the dropouts came from this track could have some interesting implications for the present reform movement in education which seeks to increase standards when a number of students cannot meet the present ones. Conversely it also raises some important questions about the effect on these students of decreasing expectations along with the lowering of the level of difficulty of the curriculum. The result may be a further diminishing of their self esteem and a further push to their dropping out. This comment by C-- a student who dropped out in grade ten is an illustration of how some students view decreasing expectations.

> Well at --- in grade seven I had lost a lot of math because my math teacher all he wanted to talk about was his trip to Florida, things like that. So they a -I was really behind in math in grade 8 and they kept me behind. They didn't bother helping me at all they just gave me an easy book to do right. Draw triangles or whatever something ... that wasn't really important so ... I would have passed if I had a few more points in grade eight.

In addition to possible injury to a student's self esteem tracking also may further exacerbate the negative influences of the peer group by clustering most of the students with problems. However, the referrals for help, grades repeated and diagnosis of learning problems also indicate that children with problems are not being ignored but the methods chosen to try and keep them in school seem to be inappropriate or insufficient.

Tracking may have negative influences on the at risk student but some graduates viewed it differently and found it to be one of their more pleasant experiences. D-- a high school graduate who is married and was expecting a baby at the time of the interview described this experience in her elementary school years.

> In grade five I was put into a special group. I think it was called a group for gifted children. It was just a pilot project in our school. ... There were only four of us I guess in the group. ... We went all over the school and we didn't have to ask permission to go out of the room. If we wanted to go to the library we just went. We worked completely independently without the teacher and it bothered a lot of kids. ... I enjoyed it, being able to work independently I really enjoyed.

D---'s comments can be contrasted with the experience of N-- who dropped out in grade ten and who was asked about his experiences in grade nine.

> Well that was the problem grade 9. ... the first one was Mr. Q for the teacher and I found the work harder and the teachers were getting more stricter and stuff cause they realized I wasn't a nice pleasant fellow so I just had a hard time that year and the second year was the same thing and I ended up attending Summer School finally, got through that ... No, I was, I don't know how you can really put it, I guess I was just a downright idiot there, I wanted to do things my way. I liked having, pleasing my friends more than I did the teachers there so I mean the teachers would tell me to do something and of course I would just not do it just to get the laugh from the rest of the class so the harder time I gave them they just gave me a harder time back and ... No, I wasn't participating at all ... I was only here for dinner and break time and going back home, that was the only reason I was here.

Protracted unpleasant experiences for the students who dropped out would contribute to their feelings of withdrawal, alienation and their negative attitude and lack of loyalty towards their school. These results are also probably indicative of the students inability to compete in nonacademic school activities and their rejection by the majority of their peers. Their feelings of failure are therefore not only in the academic area. This increased negative feeling is also what leads to their disruptive behavior and the more severe forms of punishment that result.

Peer Group Relationships

Four indicators were used to measure the nature of peer group relationships. They were whether the student had a best friend, whether the student had any social problems in school, whether the student thought he/she was part of the leading crowd at their school, and whether the student had a steady boyfriend/girlfriend. As shown in Table 5.6 only the student having a best friend was found to be significantly related to graduating or dropping out. A greater proportion of the students who graduated had a best friend in high school when compared with the group that dropped out. The finding that many dropouts did not have a best friend would seem to increase their feelings of isolation and could contribute to their negative attitudes towards school. This finding is consistent with the findings of Strother (1986), Pittman (1986), and Wyse (1987) who found dropouts to be less integrated academically or socially in school.

The result that showed that there was really no difference between the two groups on whether they were part of the leading crowd at their school was also interesting. The fact that there may be many leading crowds at a school may explain why there was little apparent difference. The following comment by T-- a dropout in grade ten helps to illustrate this finding.

> There's kind of a point list. You have to kind of make a name for yourself around here. To get in to these so called in groups you have to pile up, ya see there's different kinds of groups around here, ya got yer stoners out in the smoking area, and ya got yer jocks and yer preppies and all this kind of stuff so it depends on what group you want to get into and how to impress em.

Therefore, the opinion of whether a student was a member of the leading group at his high school was extremely subjective. It also showed that a student's behavior may have been influenced to a great extent by the group with which he/she identified.

Table 5.6

Peer Group Relationships
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	p
Best Friend (1)	4.71*	0.03
Social Problems	1.83	0.18
Steady Boyfriend/Girlfriend	0.05	0.82
Part of Leading Crowd	0.03	0.87

(1) A significantly greater proportion of graduates had a best friend in high school.

Influences on the Student

Five indicators were used to try and detect differences in the types of influences exerted on the students in the two groups. Students were asked to whom they talked when they had a serious problem, who influenced them most, what type of person they would like to resemble most, whose disapproval would be hardest for them to take, and what characteristics made a student popular at the high school they attended.

As illustrated in Table 5.7 two of these measures, to whom the student talked about a serious problem and what made a student popular were found to be significantly related to whether a student graduated or dropped out. A significant number of graduates either talked to a parent or best friend. A significant number of dropouts said they didn't talk to anyone when they had a serious problem. In addition the dropouts felt that good looks were most important in making a student popular while the graduates thought that personality was most important.

The finding that graduates thought personality was more important for popularity as compared with the dropouts who thought good looks were more important was consistent with the findings of Rock et al. (1985), Kerr et al. (1986), Pittman (1986), and Strother (1986) who found that dropouts seem to be influenced most by external influences over which they believe they have no control while the graduates are influenced most by internal influences over which they believe they do have some control. This finding would also seem to be consistent with the experiences of C-- who dropped out of school in grade ten. In describing her school experiences she related the following:

> (Grade 2), well the reason why I don't remember anything is my father had taken a heart attack and I suffered a memory loss -- they sent me to remedial reading because anything I learned I had forgotten ... (grade 3) our teacher had been pregnant so she left halfway through the year and I remember learning our times tables ... well it wasn't bad but I had gotten strep throat and it infected my ear drums so I was out of school for a long time ... (Grade 4) that's where my problems started ... well I had Mr. R-- - for a teacher and he was a real gruff teacher and I didn't like him which makes it even worse and-um-I had sinus chronic, chronic sinus infection and it really gave me bad headaches and I didn't find out for years later and I had allergies which after lunch I would have a math class with him

Table 5.7

Influences on the Student
Differences between Graduates and Dropouts (N=90)

Characteristic	Chi-Square	p
What Made a Student Popular (1)	16.56**	0.01
Who Student Talked to About Serious Problem (2)	11.79*	0.04
Most Influential Person in Their Lives	5.37	0.15
Who They Would Like to Resemble Most	3.26	0.52
Whose Disapproval Would be Hardest to Take	0.17	0.92

(1) A significantly greater proportion of graduates said personality was most important for popularity compared to dropouts who said good looks were most important.

(2) A significantly greater proportion of graduates talked to a parent or best friend when they had a problem.

> and my allergies would react and I'd be really sick and went really down hill in my math. ... (Grade 5 and Six) I moved to a private school. I really liked it. It was a lot of tough work but I made really good marks. I didn't find really too many pressures on me. ... It was something I wanted to do. ... Until October I went to the C-- and then I was a - girls when they're thirteen years old they want to be with boys so I went to S---. I left the C---. That was my choice.

The findings on to whom the student talked when they had a problem was also interesting. While graduates talked to a parent or best friend a number of dropouts talked to no one. This could be another indication of the relative isolation and lack of positive adult influence on the student in the dropout group.

Summation

A majority of the school life experiences indicators were related to graduating or dropping out. Most influential were the students school experiences and attendance, deportment, and times late. On the measures of the student's attitude towards school, the attitudes towards teachers and the student's feelings on leaving were most important. On the general school history, the student's track in high school, the history of learning problems, the number of grades repeated and referrals for help all were significantly related to retention. Only the student having a best friend was found to be significant on the peer group indicators while to whom the student talked about a serious problem and what made a student popular were significant for the measures of the other influences on the student. The comparison of the student's school life experiences of the graduates and dropouts showed that the graduates have been conditioned by success while the dropouts were conditioned by failure. The feelings of success or failure were related to the pleasantness or unpleasantness of their school experiences which in turn seem to be affect their behaviors and attitudes.

Between Group Differences
Personal Interviews

The personal interview data were also grouped according to processes. The two process groups were the student's nonacademic school history and a number of selected school recollections of the student. All variables, with the exception of the number of transfers at various levels of schooling, were coded using a seven point Likert scale. The score on the scale for each item was determined by the impression of the researcher. The impressions resulted from the information communicated to the researcher by each subject during the course of the interview.

School Recollections

Five recollections of school were measured to determine the differences between the two groups of students interviewed. They were teacher sensitivity to student's needs in elementary school, teacher sensitivity to student's needs in junior high, teacher sensitivity to student's needs in senior high, the strength of the student's memory of elementary school and the strength of the student's memory of the first day of school.

As shown in Table 5.8 the teacher's sensitivity to student's needs in both elementary school and senior high school was significantly related to whether a student graduated or dropped out. These findings are consistent with the findings of Pittman (1986) who found that one-half of the reasons given by students for leaving school related to the student's personal relationship with various components of the school environment and the most important of these were teacher characteristics. The strength of the student's memories of elementary school were not statistically significant but approached significance. The dropouts found their teachers in elementary school and senior high school to be considerably less sensitive to their needs than did the students who graduated. Also the graduates had stronger recollections of their elementary school years than did the dropouts.

Table 5.8

Selected School Recollections of Student's Interviewed Differences between Graduates and Dropouts (N=17)

Characteristic	t-test	p
Teacher Sensitivity (Senior High) (1)	-4.15**	0.00
Teacher Sensitivity (Elementary) (1)	-3.31**	0.01
Memories of Elementary	-1.92	0.07
Recollection of First day of School	-1.38	0.19
Teacher Sensitivity (Junior High)	-0.27	0.79

(1) A significantly greater proportion of dropouts felt their elementary and senior high school teachers did not try to meet their needs.

These findings might reflect a view of the dropouts that their teachers were not really interested in their well being when they were most in need of help or support. The following comparison of her life in two different elementary schools of this grade ten dropout might help to explain some of the negative feelings dropouts had toward their elementary school teachers.

> Mrs. A--- (Grade 3) she made the class sing the J----- National Anthem. She was J---- and ... but at the time my mother was in Jehovah Witness and I attended meetings with her. I wasn't a Jehovah Witness, I wasn't baptized but since I went to the meetings with my mother and that - see I don't know exactly what it is they don't believe in singing the national anthem ... It's got something to do with politics ... so all my mother told me was to stand up to show your respect for it right but don't, you don't have to sing it. She can't make you sing it. And she used to have all the desks like in a circle around the classroom and for about a month everyday she used to make me stand there in the middle of the class and she used to get all the kids to ask me to sing it. And a child in that grade ... so finally one day it really got on my nerves pretty bad so I went home and I was crying and I told my mother and she went down and she freaked at her pretty bad. And see that was a Friday afternoon cause I remember it all as plain as day. I went back to school on Monday, I didn't go in the afternoon I was too upset and when I got back to school she said M--- if we have a problem you should just talk to me about it. You know you didn't have to go to your mother. But I had tried to tell her that I was not - I didn't say I wasn't allowed but I said I didn't want to, I didn't want to sing the song but she kept pressuring me to, so finally I had to do something so I told my mother about it so she went down and she didn't bother me too much about it after that. ... Things got really better after that cause we moved. ...
>
> The next couple of years there were really good, they were probably my best years in school. .... the teachers ... I liked the teachers a lot, I got along with them very well, they were really nice people ... the kids, I got along with all the kids, I got a lot more interested in the after school activities and things like that. I joined hockey teams and soccer and this and that and everything else and my work was good. I probably did my best school work them years than any other I would imagine ... It's hard to explain, they were more understanding, they were more patient, -um- I think they were more educated, more well trained than the other teachers that I had out there, that's what I think personally myself, I can't really ... they took more of an interest in me than those other teachers did. Like they had no interest whatsoever in what these kids did, right, like except when they were in class if they went outside and got run over by a car I don't think they would have cared too much. But I did a lot of after school activities and came in on weekends to help paint stuff for plays and I never had done stuff like that before. I never had any interest in doing stuff like that before ... those people out there never ever questioned if I told them something like that and I found well because I don't know if it was because it was younger kids or not but when I went there at B------ I

> had a lot more children teasing me about it and going on about it. I think that had a lot to do with that Mrs. A--- bringing it up so often in front of the other kids right but when I went out to C--- Mum, well I always stood up for the national anthem and no one ever questioned me as to why I didn't right, you know the teachers knew why I didn't but the kids never really said anything to me like they might ask me questions why I didn't do this or why I didn't do that but they never ... No, no one treated me different.

This incident seemed to underline the important influence that a teacher can have on the affective outcomes of students and through them academic achievement. The performance of at risk students seems to be especially sensitive to the nature of the relationship with their teachers.

The relatively favorable view that students had of their junior high school teachers was also interesting. Most students seemed to view the change from the elementary school to the junior high school favorably as compared to the change from the junior high to the senior high. However, there was also evidence in the interviews that junior high school teachers generally were more sensitive to the needs of their students. The following recollection of M--- of his move to the junior high school from the elementary school is typical of many of the remarks made by the graduates as well as a number of the dropouts.

> That was a really big impression made on me and it was a really good impression. A tremendous effect on me for the school itself and for the people in it especially the teachers. Now I still like to go back and talk - the same as high school I guess - ... now all the teachers there were really good and ... they were more than teachers I guess they could be thought of as people and as a friend. I guess there were some that you know you could just talk to at lunch time or a particular two or three that were really you know - that seemed to really understand and really care like you know outside of the ... high school was an equally rewarding experience, the teachers made just as good an impression - a lot of teachers put in a lot more than they had to.

Some of the graduates also tended to have earlier pre-school memories and the memories were usually more positive. This comment was made by D-- a graduate when she was asked about her first memory.

> I think it would be my third birthday. And my grandmother had made a Nova Scotia tartan kilt and vest for me. And she drove all the way from R--- in a snow storm to give me this for my birthday.

For many of the dropouts their first memory was of school and it was a negative or unpleasant one. A number of the dropouts interviewed said they had no recollection of their pre-school years or their first few years in school. This response of N-- is typical of a number of the dropouts.

> I don't even remember attending grade primary at all ... I remember grade three, I remember the teacher Mrs. K and a lot of trouble, strap ... we used get in trouble with the teacher and she'd send us right to the principal and out with the hands.

The dropouts might not want to remember what was for them a very unpleasant experience that took place at an early age.

Non Academic School History

Nine measures were used to compare the differences in the non academic school background of the two groups of students being interviewed. They were the smoothness of the transition from home to elementary school, from elementary school to junior high school, and from junior high school to senior high school; the number of times the student transferred to another school in elementary school, junior high school and senior high school; the extent to which the student seemed to be integrated into the school setting in elementary, junior high school and senior high school. As is illustrated by Table 5.9 only the smoothness of the transition from home to school was significantly related to whether a student graduated or dropped out. The transition from junior high to senior high was not statistically significant but closely approached significance.

There was a marked difference on those variables that measured how the student made the transition at various levels of his/her education. However the transition to school in elementary school was significantly related to whether the student graduated or dropped out. Students who eventually dropped out had a more difficult time making the adjustment to school. E-- who dropped out of school in grade ten offered the following as her recollection of her first day of school.

Table 5.9

Nonacademic School History of Student's Interviewed Differences between Graduates and Dropouts (N=17)

Characteristic	t-test	p
Transition to School (Elementary) (1)	-2.70*	0.02
Transition to School (Junior High)	-1.21	0.24
Transition to School (Senior High)	-1.96	0.07
Transfers (Elementary)	0.41	0.69
Transfers (Junior High)	-1.48	0.16
Transfers (Senior High)	-0.09	0.93
Social Integration (Elementary)	-1.05	0.31
Social Integration (Junior High)	-1.71	0.11
Social Integration (Senior High)	-1.43	0.17

(1) A significantly greater proportion of graduates made a better initial adjustment to school.

> I missed the bus. I didn't want them to take me that's why I wanted to take the bus and I wanted to miss it. ... I couldn't care less whether I went or not.

However the dropouts as well as the graduates considered their transition to junior high in a positive manner. M-- who dropped out in grade ten made the following comment about the move from elementary to junior high.

> I felt great. I thought I was all grown up. My friend B--- and I on the bus together, I got her to stay the night at my place and then we'll go to school together and we got there and we were all excited and jumping around and stuff ... the work was different, the English I liked, the English was a lot of fun ... Science was hard and I found math really really hard, a lot of trouble with math. But I liked it. I had a lot of fun my first year in grade seven, I was failing but I still had a lot of fun. ... The school had a lot more to it, there was a cafeteria, outside sports, you were allowed to do what you wanted almost, you know, and there was a lot more freedom.

R-- who dropped out of school during grade twelve also remembered the move to junior high as a positive one.

> I was excited to a point where when I got there I was scared because it was a new experience , the rules were so different you have to change classes and stuff like that. It was just a totally new experience and you know all the kids there were picking on you because you're in grade seven and everything so it was kind of scary at first you know but after I got out of grade seven ... it wasn't a bad year but I liked grade eight and nine much more. ... I got through that scary stage and I started to meet new people not just my old friends from just where I lived but there were more kids from all over so I met new people and the teachers I found were pretty good and overall I just met more new friends and there wasn't any groups or anything like that. Everybody just sort of got along.

There was also some difference between the two groups in the transition to the senior high school. This comment was made by W-- a dropout in grade ten concerning his move to the senior high.

> I went down hill there. Well I went from one school that was really nice, I went to ---- senior high school. It wasn't that great there, the water didn't taste good, the lockers were all banged in ... the students were always doing something to it ... At first I looked forward to it but once I got there ... I don't know. It seemed like people always had excuses for slacking off ... there was nothin I could get involved in ...

While not significantly related to dropping out or graduating this difficulty in making the adjustment to senior high is quite noticeable for dropouts. While reacting favorably to the increased freedom and size of the junior high school the opposite effect

seems to take place at the senior high. It is here where all the negative influences or positive influences coalesce into producing success or failure.

Summation

There was a relationship between the selected school recollections, the nonacademic school history of the students interviewed and student high school retention. Dropouts had a very negative view of their elementary school and senior high school teachers. The qualitative data showed that a teacher's sensitivity to a student's needs is related to the affective outcomes which in turn are related to achievement. The data also showed that many dropouts do not make a good transition from home to school.

Summary

In this chapter a number of process variables were used to compare the group of graduates to the group of dropouts. Also presented in this chapter was a discussion of the findings related to the process variables. Integrated with the discussion were supportive references from the literature and selected comments from the taped interviews with selected respondents. A discussion of the data analysis from the taped interviews was also presented.

The analysis of data for the process variables showed all the indicators in both sets of academic performance measures were significantly different for the graduates and dropouts. Of the school life experience indicators the student's school experiences, general school history, and the student days absent, deportment and times late were significantly different. The attitudes toward school, peer group relationships and influences on the student did not appear to be strongly related to whether or not a student graduated or dropped out. However, of the process variables considered it was the academic performance indicators which were most consistently related to retention and

which seemed to determine the nature of the school life experiences. The results also suggested that there may be a relationship between ability and high school retention.

The measures of school life experiences illustrated that there was a relationship between the degree of pleasantness of a student's school experiences and graduating or dropping out. Graduates were conditioned by success and had more pleasant school experiences while dropouts were conditioned by failure which made their school experiences unpleasant and resulted in a process of alienation, negative attitudes, poor attendance, and lateness which culminated in their dropping out. These results were confirmed by the qualitative material which showed that the pleasantness of a student's school experiences were related to the sensitivity of the teachers to the student's needs especially at the elementary and senior high school level. It also showed that graduates made a better transition to school. The integration of the data from the taped interviews with the quantitative findings revealed that high school graduation or dropping out was the result of an interaction of a complex mixture of negative and positive influences which took place over time.

The findings of the data analysis indicated that the process variables had strong and consistent relationships to graduating or dropping out. As was the case with the inputs those process variables that were most strongly related appeared to be those that were closely associated with the characteristics of the individual student and the type of relationship the student had with their parents.

Chapter VI

Presentation and Discussion of the Findings Suburban and Rural

Some of the literature on input output studies (Wendling and Cohen:1981), (The Institute for Educational Leadership:1986), (Randhawa and Hunt:1987) suggest that the factors that affect student achievement in the the urban areas may not affect achievement in the rural areas to the same extent. This chapter focuses on the question of environmental differences through a separate analysis for suburban and rural students. The analysis addresses the third and fourth research questions of the study which are as follows:

(3) What are the significant differences in input variables between graduates and dropouts in suburban and rural areas?

(4) What are the significant differences in process variables between graduates and dropouts in suburban and rural areas?

The variables were grouped in the same manner as presented in chapters four and five. The analysis was carried out using t-tests and chi square procedures as needed.

Inputs

Home Environment

Socioeconomic status. As shown in Table 6.1 there were two indicators in which suburban graduates and dropouts were different from rural graduates and dropouts. In the suburban setting only the level of the father's occupation was higher for graduates than it was for dropouts. For rural students only the education level of the mothers was significantly higher for graduates than it was for dropouts.

The difference in the occupation status of the fathers of suburban graduates compared to suburban dropouts could mean that suburban graduates come from higher

Table 6.1

Differences in Socioeconomic Status Characteristics Between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**t-test**	**t-test**
Home Index Score	0.53	1.20
Highest Level of Father's Education	0.61	1.24
Father's Occupation (1)	2.60*	0.01
Highest Level of Mother's Education (2)	1.25	2.62*
Mother's Occupation	0.71	0.79

*p < .05

(1) In suburban areas only the occupation index of fathers of graduates was significantly higher than that of the fathers of dropouts.

(2) In rural areas the mothers of graduates had a significantly higher level of education than the mothers of dropouts.

income families which might also positively affect their achievement. The differences might also reflect the wider range in income levels in the suburban areas. Also in suburban areas people tend to cluster more in neighborhoods according to income level which might also serve to magnify any positive influences on achievement in higher socioeconomic areas and any negative influences in lower socioeconomic areas. The importance of the education level of the mother in the rural areas might mean that more highly educated mothers in those areas take a more active part in the education of their children. An examination of the data also revealed that there was a wider range in the education level of mothers in rural areas. This might also help to explain its significance.

Home Educational Environment. As shown in Table 6.2 there was only one difference between graduates and dropouts in suburban and rural areas on the indicators for the student's home environment. There was a significant difference between suburban graduates and dropouts on parental attendance at parent teacher interviews with no corresponding significant difference between rural graduates and dropouts. In the suburban areas a greater proportion of the dropouts in relation to the graduates had only one parent attending parent-teacher interviews.

The results probably reflects a united commitment on the part of many parents of suburban graduates to seeing that their children get a good education. Such a commitment might also reflect the extra demands that are necessary to meet increased expectations in suburban schools. This assertion is consistent with other findings in this study concerning the differences between suburban and rural areas on student characteristics and school life experiences.

Parental Characteristics. As shown in Table 6.3, none of the measures of parental characteristics were found to be significantly different between graduates and dropouts in either the suburban or rural areas. Therefore the parental characteristics measured in this study were not related to the high school achievement of suburban or rural students. Part of the reason for this result might be the relative stability of the family structure of the

Table 6.2

Differences in Home Educational Environment between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**Chi-Square**	**Chi Square**
Parent Attendance at Parent Teacher Interviews (1)	7.79*	2.93
Read to As A Child	0.70	0.16
Reactions of Parents to good Report	0.81	1.28
Reactions of Parents to poor Report	3.06	2.35
Parental Assistance With Homework	1.24	1.18

***p < .05**

(1) In suburban areas only a greater proportion of dropouts to graduates had one parent attending parent teacher interviews.

Table 6.3

Differences in Parental Characteristics between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**Chi Square**	**Chi Square**
Family Structure	5.63	9.41
Parental Television Viewing	1.47	0.49
Language at Home	2.91	---
Parental Participation in Sport	0.00	1.64

Note. There were no significant differences between graduates and dropouts in either suburban or rural areas.

students surveyed. Almost 80% of all the respondents surveyed came from homes where they were living with both natural parents. In addition, it might be that parental characteristics have their impact by acting through other variables like commitment to education or the nature of the parent student relationship. Such an assertion would be consistent with the findings of Jencks (1975), Harbin-Kemp (1983), and Strother (1986) who found that it was the nature of the parent student involvement that was the critical factor. In this regard it was interesting that the chi square comparisons on family structure showed a greater proportion of suburban dropouts to graduates lived with their mother only. For those students it was probably more difficult for the parents to maintain the type of involvement necessary to insure success.

The Nature of the Parent-Student Relationships. As illustrated by Table 6.4, there was a significant difference between rural graduates and dropouts on regular chores and the forms of punishment used at home with no corresponding significant difference on either item for the suburban graduates and dropouts. A greater proportion of rural graduates had chores when compared to the rural dropouts. Also the rural graduates received different forms of punishment compared to the rural dropouts. For example, a greater proportion of rural graduates were most often given a lecture while a greater proportion of the rural dropouts were grounded.

Summary of Home Environment Findings. The study findings showed that only a few home environment variables measured were related to graduating or dropping out in either suburban or rural areas. However, there were a few differences in the way some specific measures of socioeconomic status, home educational environment and the nature of the parent student relationship were related to high school retention in the suburban and rural environments. Father's occupation and parent attendance at parent teacher interviews were related to graduating or dropping out in suburban areas but not in rural areas. Mother's educational level, regular chores at home, and the forms of punishment used at home were related to graduating or dropping out in rural areas but not in suburban

Table 6.4

The Nature of Parent-Student Relationships between Graduates and Dropouts for Rural and Suburban Students

Characteristic	Suburban (N=47)		Rural (N=43)	
	Chi Square	t-test	Chi Square	t-test
Accessibility to Automobile	2.80	----	7.15	----
Attendance at Cultural Events with parents	----	-1.95	----	-1.68
Regular Chores (1)	----	-1.38	----	-2.04*
Participation in Leisure Activities with parents	----	-1.24	----	-1.29
Forms of Punishment at Home (2)	4.43	----	7.83*	----
Quality of Home Life	0.20	----	0.01	----
Regular Allowance	1.11	----	0.00	----
Student's Friends Welcome in Home	0.19	----	0.00	----
Parental Attitudes to Teenagers	1.25	----	0.90	----
Daily Family Meal	0.00	----	0.00	----

table 6.4 continues

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Curfew while in High School	0.00	----	0.00	----

***p < .05**

(1) In rural areas only a greater proportion of graduates had regular chores compared to dropouts.

(2) In rural areas only a greater proportion of graduates received a lecture compared to dropouts and a greater proportion of dropouts were grounded compared to graduates.

areas. The parental characteristics measured were not related to retention in either suburban or rural areas.

Student Characteristics

Student characteristics were grouped according to five categories. They were personal characteristics, future expectations, use of free time outside school, values, and lifestyle.

Personal Characteristics As is shown in Table 6.5, only one of the personal characteristics indicators showed a significant difference between graduates and dropouts in suburban areas compared to rural areas. There was a significant difference between rural graduates and dropouts on unusual obstacles to overcome with no corresponding significant difference between suburban graduates and dropouts. A greater proportion of rural dropouts had unusual obstacles to overcome in order to be successful when compared to the rural graduates. This was consistent with Jencks (1975) who argued that school outcomes depend on the characteristics of the students entering them. Such results mean that negative influences caused by an unusual obstacle in a rural area most likely will cause the student to leave school before graduating.

Future Expectations. As illustrated in Table 6.6, there were significant differences between graduates and dropouts in suburban and rural areas on two of the three indicators measured. In the rural areas there was a very significant difference between graduates and dropouts on the future income expected and a significant difference on the most important characteristic in a job. There was no corresponding significant difference on either of these variables for the suburban graduates and dropouts. The graduates in the rural areas expected to receive much greater amounts of future income compared to the dropouts. They also felt the enjoyment of the work was the most important characteristic necessary in a job.

Table 6.5

Personal Student Characteristics between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Sex	0.33	----	0.00	----
Age	----	0.16	----	-0.42
Marital Status	----	----	0.00	----
Number of Siblings	2.01	----	0.43	----
Present Employment Status	16.49**	----	18.99**	----
Unusual Obstacles to Overcome (1)	1.07	----	5.33*	----
Health (Elementary)	----	-1.53	----	-0.71
Health (Junior High)	----	-1.24	----	-1.03
Health (Senior High)	----	-1.56	----	-0.76

*p < .05.

table 6.5 continues

**p < .01

(1) In rural areas only a greater proportion of dropouts to graduates had an unusual obtacle to overcome.

Table 6.6

Future Expectations between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Highest Level of Education Expected	----	5.38**	----	4.45**
Future Income Expected (1)	----	0.93	----	3.31**
Most Important Characteristic in a Job (2)	7.10	----	8.26*	----

*p < .05

** p < .01

(1) In rural areas only a greater proportion of graduates to dropouts expected to receive higher levels of future income.

(2) In rural areas only a greater proportion of graduates saw the enjoyment of the work as most important compared to the dropouts who mostly valued security.

These results are consistent with other findings in the study that showed that the general expectations for education in rural areas may be lower than those in suburban areas. This tendency for lower expectations may explain some of the differences between graduates and dropouts in suburban and rural areas. Such an assertion would be consistent with the findings of Strother (1986) who found that the parents of dropouts had lower expectations for their children. For marginal students in rural areas such influences could be very significant in determining graduating or dropping out.

Use of Free Time Outside School. As shown in Table 6.7, there were very significant differences between suburban graduates and dropouts on the time spent on homework, evenings spent with friends and television viewing on a weekday.

These findings showed a different pattern in the use of free time for suburban graduates and dropouts when compared to rural graduates and dropouts. Suburban graduates spent more time on homework compared to suburban dropouts who spent more evenings with their friends. Also suburban graduates spent more time on organized activities compared to suburban dropouts who spent more time than the graduates watching television.

The study showed that the student's use of free time varied in importance between suburban and rural areas. The time spent on homework, organized activities, evenings spent with friends and television viewing on a weekday were all related to graduation or dropping out in suburban areas. Such findings are consistent with the findings of Newland (1933), Rock et al. (1985), and Strother (1986).

The statistical comparisons showed that the means for rural graduates and dropouts are lower and much closer together when compared to the suburban graduates and dropouts on the indicators for the use of free time. These results might be related to the expectations in rural schools compared to suburban schools. It is possible that the demands and expectations in the suburban high schools are greater and thus the graduates have to work harder to meet them. Conversely in the rural schools the graduates would

Table 6.7

Differences in Student Use of Free Time Outside School between Graduates and Dropouts in Suburban and Rural Areas

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Time spent on Homework (1)	----	3.26**	----	0.97
Organized Activities	----	2.16*	----	2.04*
Evenings Spent With Friends (2)	----	-3.40**	----	0.55
Television Viewing on Weekdays (3)	----	-2.02*	----	0.19
Part Time Job	0.00	----	0.19	----

*p < .05

**p < .01

(1) In suburban areas only a greater proportion of graduates to dropouts spent more time doing homework.

(2) In suburban areas only a greater proportion of dropouts to graduates spent more evenings with their friends.

(3) In suburban areas only a greater proportion of dropouts to graduates spent more time watching television.

have to work less outside school to achieve high academic results. This assertion is consistent with the findings on variables like the amount of time spent on homework and organized activities between graduates and dropouts in suburban and rural areas.

Values. As shown in Table 6.8, only one of the indicators of student values was found to be significant between graduates and dropouts in suburban and rural areas. The indicator for what the years spent in high school should have given them was found to be very significant for rural graduates compared to rural dropouts. A greater proportion of rural graduates to rural dropouts felt that their high school years should have given them a broad education. A significantly greater proportion of rural dropouts to graduates felt their high school years should have given them vocational training.

These findings showed that student values had little relationship to graduating or dropping out in suburban or rural areas. However a student's educational expectations did influence retention but only in rural areas. The finding that rural graduates expected more from their high school years is consistent with the findings on student expectations. Those students that expected more did better. This was also consistent with the findings of Boardman, Davis, and Sanday (1977) who viewed the educational process as a number of interrelated outputs.

Lifestyles. As shown in Table 6.9, there were significant differences on two of the four indicators for the differences in lifestyle between graduates and dropouts in suburban and rural areas. A greater proportion of rural dropouts to graduates were involved in alcohol use while a greater proportion of suburban dropouts to graduates were involved in drug use.

These results showed that the differences in lifestyle between graduates and dropouts were basically the same regardless of whether they lived in a suburban or rural area. The results showed that there was no real difference in the tendency for graduates to engage in constructive activities or dropouts to engage in destructive activities regardless of the environment. The differences between suburban graduates and

Table 6.8

Student Values between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**Chi Square**	**Chi Square**
Secret Activity that Parents would Disapprove	0.76	3.58
Characteristic Deemed Necessary for Success	7.24	1.34
What Years Spent in High School Should Have Given Them (1)	1.39	16.79**
Attitude Towards Church	0.39	6.08
Handing in Another's Assignment as Their Own	0.55	0.00
Money Found in School	0.87	0.00
Thing Strived For Most in High School	1.78	7.34

*p < .05

**p < .01

(1) In rural areas only a greater proportion of graduates to dropouts felt that their high school years should have given them a broad education and a greater proportion of dropouts to graduates felt that their high school years should have given them vocational training.

Table 6.9

Student Lifestyles between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Cigarette Smoking	11.28**	----	6.29*	----
Drug Use (1)	----	2.50*	----	1.69
Alcohol Use (2)	2.59	----	6.53*	----
Eating Habits	----	1.95	----	1.58

*p < .05.

**p < .01

(1) In suburban areas only a greater proportion of dropouts to graduates were involved in drug use.

(2) In rural areas only a greater proportion of dropouts to graduates were involved in alcohol use.

dropouts on drug abuse and rural graduates and dropouts on alcohol abuse is probably best explained by the availability of each in their respective environments.

Summary of Student Characteristics Findings. The study findings showed several differences on various measures of student characteristics as a result of the suburban or rural environment. Unusual obstacles, future income expected, the most important characteristic in a job, organized activities, what the years spent in high school should have given them, and alcohol use were related to graduating or dropping out in the rural areas only. Time spent on homework, evenings spent with friends, television viewing on a weekday, and drug use were related to retention in suburban areas only. The results showed that future expectations were more important in rural areas while the students use of free time was important in suburban areas. Lifestyles were important in both areas but specific characteristics varied in importance according to the suburban or rural nature of the environments.

There was a difference in the extent to which student characteristics were related to graduating or dropping out as a result of environment. The discussion revealed that there is some evidence in the study to indicate that parents in rural areas have lower expectations which might be passed on to their children. In addition the differences in the patterns of the use of free time may reflect a difference in expectations between suburban and rural schools as well. There was no real difference in the way lifestyle was related to retention in suburban and rural areas. Graduates tended to engage in constructive activities in both areas while dropouts tended to engage in behavior which was self destructive regardless of the environment.

Summary of Input Findings and Discussion

These results showed that there were some differences in the way home educational environment was related to graduating or dropping out in suburban and rural areas. There were also some important differences in the way student characteristics were related

to high school achievement in suburban areas when compared to rural areas. Most noticeable was that future expectations were more related to graduation or dropping out in rural areas than they were in suburban areas while the student's use of free time was important in suburban areas. Student lifestyles were important in both areas but individual lifestyle indicators varied according to the suburban or rural nature of the environment.

The discussion of the study findings of the input comparisons helped to show that the relationship of the home environment inputs may be mostly related to high school achievement through other indicators including the student characteristic inputs. The major differences in student characteristics which showed future expectations related to high school achievement in suburban areas and the student's use of free time related to high school achievement in rural areas may be the result of the differences in the expectations of the home and the schools in each environment.

Process

Academic Performance

Achievement Test Results. As is shown in Table 6.10, there was no real difference between graduates and dropouts in suburban areas compared to graduates and dropouts in rural areas on academic achievement test scores. However, on mechanics of writing in suburban areas there was a very significant difference between graduates and dropouts with no corresponding significant difference in rural areas. The mean scores of graduates in suburban areas on mechanics of writing were higher than the mean scores of dropouts in those areas.

The findings for mathematics computation and mathematics basic concepts were also interesting although not significantly different between the two areas. There was a very significant difference between suburban graduates and dropouts on both

Table 6.10

Achievement Tests Results between Graduates and Dropouts for Suburban and Rural Students

	Suburban		Rural	
Characteristic	**N**	**t-test**	**N**	**t-test**
English Expression	36	3.74**	37	2.58**
Math Computation	36	3.35**	37	2.00*
Social Studies	35	2.99**	36	3.10**
Science	36	3.45**	36	3.00**
Math Basic Concepts	41	4.70**	37	2.38*
Reading	41	2.92**	37	3.11**
Mechanics of Writing (1)	41	3.11**	37	1.20

*p < .05

**p < .01

(1) In suburban areas only the mean score of graduates compared to dropouts was significantly higher in Mechanics of Writing.

mathematics computation and mathematics basic concepts. The differences were just significant for rural graduates and dropouts on the same two scores. The mean score of graduates was higher than the mean score of dropouts in mathematics computation and mathematics basic concepts in both suburban and rural areas. Both of these tests appeared to measure knowledge and ability that are school intensive. This assertion is supported by the findings of Saks and Brown (1986) who found that the effects of time on the learning of mathematics varied significantly across teachers. The results, especially the one that indicates that the suburban dropouts are doing better than the rural graduates in mathematics computation, raises a question about the quality of mathematics instruction and the level of expectations in rural schools compared to suburban schools. For example, based on the mathematics scores a suburban dropout might not be a dropout if placed in a rural school.

Grade Nine Basic Program. As shown in Table 6.11, there were significant differences on only two of the indicators used to measure the differences between graduates and dropouts on the grade nine program. There was a significant difference between suburban graduates and dropouts in geography with no corresponding difference between rural graduates and dropouts. Also there was a very significant difference between rural graduates and dropouts in industrial arts with no significant difference between suburban graduates and dropouts on the same items. Graduates did better than dropouts in both subjects in their respective areas.

Any discussion of the grade nine academic performance must be tempered by the knowledge that the marks in each subject area were solely determined by the teacher instructing in that subject. According to the achievement test results the quantity and level of difficulty of the material would seem to vary from school to school as would the teacher expectations. The results also showed that the relationship between the graduates and dropouts on academic performance was the same whether they lived in suburban or rural areas. Graduates did well academically and dropouts didn't. However, the

Table 6.11

Grade IX Academic Results
Differences between Suburban and Rural

	Suburban		Rural	
Subject	**N**	**t-test**	**N**	**t-test**
English	45	2.65**	42	3.52*
Math	44	1.40	42	1.83
Science	43	2.83*	42	2.13*
Geography (1)	15	2.24*	24	1.78
History	15	0.85	24	1.67
Social Studies	43	2.50*	40	3.10**
French	33	3.53**	31	2.62**
Physical Education	42	3.20**	40	2.68**
Industrial Arts (2)	19	1.04	23	2.96**
Home Economics	21	4.54**	16	2.34*

***p < .05**

****p < .01**

(1) In suburban areas only the marks of graduates were significantly higher than dropouts in Geography.

(2) In rural areas only the marks of graduates were higher than the dropouts in Industrial Arts.

relationship of specific subjects to high school achievement only varied slightly as a result of the environment.

Summary of the Findings of Academic Performance Indicators. The findings showed that on the achievement test scores the only major difference was in mechanics of writing where there was a significant relationship in suburban areas but none in rural areas. On the grade nine basic program measures the significant relationships were in geography in suburban areas only and industrial arts in rural areas only. The achievement test results when considered with the basic program measures seemed to provide evidence that there were some differences between suburban and rural schools which may be related to high school achievement. However the relationship of graduates to dropouts on academic performance was about the same in suburban and rural areas. Graduates did better than dropouts on all achievement test and academic program measures regardless of the environment.

School Life Experiences

The following clusters of school life experiences were considered: attendance deportment and times late, attitude towards school, general school history, peer group relationships, and influences on the student.

Attendance, Deportment and Times Late. As shown in Table 6.12, there was a significant difference between rural graduates and dropouts on deportment in junior high with no corresponding significant difference for suburban graduates and dropouts on the same item. The deportment of the rural dropouts was worse than the rural graduates in junior high. Also there was a significant difference in times late of suburban graduates compared to suburban dropouts with no corresponding difference between rural graduates to dropouts. Suburban dropouts compared to suburban graduates were late more often.

Table 6.12

Days Absent, Deportment and Times Late between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**t-test**	**t-test**
Days Absent (Elementary)	-0.61	-1.42
Days Absent (Junior High)	-2.22*	-2.02*
Days Absent (Senior High)	-4.27**	-2.39*
Deportment (Elementary)	0.13	-0.92
Deportment (Junior High) (1)	-1.74	-2.40*
Deportment (Senior High)	-2.10*	-3.20**
Times Late (2)	2.71**	-0.07

***p < .05**

****p < .01**

(1) In rural areas only the deportment of dropouts while in junior high was worse than the deportment of graduates.

(2) In suburban areas only the dropouts were late more often than the graduates.

The results showing the relationship between achievement and junior high deportment in rural areas may be partly a result of a difference in the attendance patterns of suburban and rural students. For example, most of the rural students are bused to school which makes being truant more difficult. Also the nature of the rural environment makes reasons to be truant less attractive as well as more likely that the student's absence would be noticed. These factors would result in the students in the rural areas missing fewer days. However, the at risk students for the most part are the same students who are the deportment problems. In the rural areas these students were in attendance more in junior high school and therefore deportment would be more important in relation to graduating or dropping out at that level.

On times late the significant difference between suburban graduates and dropouts with no corresponding significant difference between rural graduates and dropouts showed that graduates in suburban areas were late less often. However the very small difference in the means of the rural dropouts and graduates on times late was probably also a consequence of most of these students being bused. If they were not on time for their bus then they would probably be absent for the day instead of late.

Attitudes Towards School. As is illustrated in Table 6.13, there was a significant difference between suburban graduates and dropouts on their feelings on leaving school but no corresponding difference between rural graduates and dropouts. A significantly greater proportion of suburban graduates had more positive feelings on leaving school compared to the suburban dropouts.

These findings showed that there was little difference in the strength of the relationship between high school retention and student attitudes toward school which depended on the nature of the environment. The general attitude towards school appeared to be important for high school retention in the suburban areas but not in the rural areas. This could be another indication that there are different characteristics common to suburban and rural schools that are related to retention.

Table 6.13

Attitudes Towards School between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**Chi Square**	**Chi Square**
Attitudes Towards Teachers	6.13*	9.73**
Feelings on Leaving (1)	10.86*	7.75
Opinions on Major Problems	4.76	3.08
Like to be Remembered	2.93	2.51
Subject Preferred	2.60	2.36

*p < .05

**p < .01

(1) In suburban areas only a greater proportion of graduates to dropouts had more positive feelings on leaving high school.

General School History. As illustrated in Table 6.14, there were a number of differences between graduates and dropouts in suburban areas compared to graduates and dropouts in rural areas on the indicators for general school history. There was a very significant difference between rural graduates and dropouts on the history of learning problems but no corresponding difference between suburban graduates and dropouts on the same item. There was a significant difference between suburban graduates and dropouts on the grades repeated but no corresponding significant difference between rural graduates and dropouts. On the election to a school position there was a significant difference between rural graduates and dropouts with no corresponding significant difference between suburban graduates and dropouts. There was also a significant difference between rural graduates and dropouts on expulsions but no corresponding significant difference between suburban graduates and dropouts on the same indictor.

A significantly greater proportion of rural dropouts to graduates had a history of learning problems. A significantly greater proportion of suburban dropouts to graduates had repeated grades and a significantly greater proportion of rural dropouts to graduates had been expelled. Only a greater proportion of rural graduates to dropouts were elected to a school position.

These findings showed that there was a relationship between general school history and graduating or dropping out in both suburban and rural areas. However there was a difference in the strength of this relationship which seemed to depend on the nature of the environment. The variables showing the differences indicated that there were differences in the characteristics of suburban and rural schools which were related to retention.

The much wider range in the grades repeated in the suburban schools might be partially explained by the wider range of abilities and greater overall heterogeneity of the suburban elementary schools. The teachers would have a different basis for making comparisons in contrast to the rural schools. What might be acceptable in a rural school might not be acceptable in a suburban school. Also learning problems were related to

Table 6.14

General School History between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Tracking (U.P. N.U.P.)	----	3.64**	----	2.77**
Extracurricular Participation	----	2.44*	----	3.34**
Learning Problems (1)	0.80	----	7.93**	----
General High School Experiences	6.37**	----	4.79*	----
Grades Repeated (2)	----	-3.65*	----	-0.73
Referred for Help	1.17	----	2.14	----
Elected to School Position (3)	0.00	----	4.15*	----
Academic Awards	2.94	----	0.00	----
Expulsion (4)	----	----	4.24*	----
Most Frequent Form of Punishment	11.25**	----	9.89*	----

table 6.14 continues

	Suburban (N=47)		Rural (N=43)	
Characteristic	**Chi Square**	**t-test**	**Chi Square**	**t-test**
Suspensions	0.00	----	1.03	----
Transfers Elementary	----	0.00	----	0.31
Transfers Junior High	----	0.16	----	-0.68
Transfers Senior High	----	-1.07	----	-1.10
Special Program (High School)	0.57	----	0.05	----

***p < .05**

****p < .01**

(1) In rural areas only a greater proportion of dropouts to graduates had a history of learning problems.

(2) In suburban areas only a greater proportion of dropouts to graduates had repeated grades.

(3) In rural areas only a greater proportion of graduates to dropouts were elected to a school position.

(4) In rural areas only a greater proportion of dropouts to graduates had been expelled.

graduating or dropping out in rural areas but not suburban areas. Part of this difference might be explained by better support services in the suburban schools. Learning problems might be better diagnosed because they might be more obvious to the teacher as a result of the variety of student abilities. Also better remedial support might be available to assist the student in difficulty thus making it possible for that student to continue in school. The learning problems in the rural areas may be more severe and rural schools may lack the expertise to assist students in difficulty available in suburban areas.

Expulsions were related to graduating or dropping out in rural areas but not in suburban areas. Such findings may be a result of the poorer academic performance of the rural dropouts relative to the other three groups and the resultant increase in negative attitude and alienation that results. The overall poorer deportment levels in the rural schools were consistent with the other indicators of student achievement. Because these other negative influences were in greater abundance in rural areas negative behavior was probably more common. The results may also indicate that the rural schools see expulsion as a better alternative for maintaining discipline than do the suburban schools.

There was a much larger proportion of rural graduates to dropouts who were elected to a school position compared to the suburban graduates and dropouts. This may be an indication that students with ability in the smaller rural schools have a much greater opportunity to participate. A few high ability students would tend to be involved in a number of activities while in the suburban schools many high ability students might have to compete to be involved in such activities. The nature of the rural school might also encourage a sense of loyalty and commitment on the part of those students who were successful thus encouraging even more participation on the part of the graduates.

Peer Group Relationships. As is shown in Table 6.15, there was a significant difference between suburban graduates and dropouts on whether they were part of the leading crowd at their school but there was no corresponding difference between rural

Table 6.15

Peer Group Relationships between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**Chi Square**	**Chi Square**
Best Friend	3.04	1.03
Social Problems	0.78	0.16
Steady Boyfriend/Girlfriend	0.45	1.30
Part of Leading Crowd (1)	4.41*	1.97

*p < .05

**p < .01

(1) In suburban areas only a greater proportion of dropouts to graduates thought that they were part of the leading crowd at their school.

graduates and dropouts on the same item. A significantly greater proportion of suburban dropouts to suburban graduates thought that were part of the leading crowd at their school. There were no significant differences between graduates and dropouts in either suburban or rural areas on any of the other measures of peer group relationships.

These findings showed that there was a weak relationship between the peer group indicators measured in this study and high school retention in either suburban or rural areas. However, in suburban areas there was a relationship between whether a student perceived himself/herself to be part of the leading crowd and their graduating or dropping out.

A much greater proportion of suburban dropouts to suburban graduates said they were part of the leading crowd at their school. This difference was just as great but completely reversed for the rural dropouts and graduates where a much greater proportion of the graduates thought they were part of the leading crowd. This latter result is consistent with the findings of Pittman (1986) who found that the main reasons for dropping out were related to a students personal relationship with various components of the school environment. As is the case for graduates and dropouts generally what a rural or suburban student considers to be the leading crowd is an extremely subjective matter. There may be a number of "leading crowds" in a school. This would help to explain the difference between the suburban and rural areas on this indicator. In suburban areas there is probably accessibility to a greater number of different kinds of groups and therefore less chance that a student would be totally isolated socially.

Influences on the Student. As is shown by Table 6.16, there was only one significant difference between graduates and dropouts in suburban and rural areas on the indicators for the influences on the student. What made a student popular in the high school they attended was significant for rural graduates and dropouts with no corresponding difference between suburban graduates and dropouts. A significantly greater proportion of rural dropouts to rural graduates thought that good looks were most

Table 6.16

Influences on the Student between Graduates and Dropouts for Suburban and Rural Students

	Suburban (N=47)	Rural (N=43)
Characteristic	**Chi Square**	**Chi Square**
What Made a Student Popular (1)	8.02	11.46*
Who Student Talked to About Serious Problem	4.94	7.82
Most Influential Person in Their Lives	2.54	3.26
Who They Would Like to Resemble Most	5.32	0.81
Whose Disapproval Would be Hardest to Take	0.44	1.84

***p < .05.**

****p < .01**

(1) In rural areas only a greater proportion of dropouts to graduates thought good looks were most important for popularity and a greater proportion of graduates to dropouts felt that being athletic and personality were most important.

important for popularity while a greater proportion of rural graduates to dropouts thought that being athletic and personality were most important. These results are consistent with the findings of Strother (1986) who found that dropouts thought they were unpopular with other students.

There were no significant differences between graduates and dropouts in either suburban or rural areas on any of the other influences on the student that were measured. These findings showed that for the most part there was little relationship between general influences on the student and his/her graduating or dropping out in either suburban or rural areas.

Summary of the Findings of the School Life Experiences. The study findings showed a number of differences in the relationship between school life experiences and graduating or dropping out as a result of a student living in a suburban or rural environment. In the suburban areas days absent in junior high, times late, feelings on leaving school, grades repeated, and whether the student felt himself/herself part of the leading crowd all were related to graduating or dropping out. In the rural areas whether the student was elected to a school position, deportment in junior high, learning problems, expulsions, and what made a student popular were related to graduating or dropping out.

There were also differences in the extent to which specific variables influenced graduating or dropping out depending on the suburban or rural nature of the environment. However, the findings showed that the relationship between graduates and dropouts on school experiences was the same regardless of the environment. Graduates tended to have positive school experiences while dropouts tended to have negative school experiences. The differences in some of the specific variables showed that the type of negative or positive experience appeared to be partly related to the suburban or rural nature of the school.

Summary of the Process Findings

The study results showed that there was little difference in the way the academic performance indicators were related to graduating and dropping out in suburban and rural areas. There were very few major differences in achievement test results and academic performance between the suburban and rural areas but there was some degree of variation in the importance of specific items as a result of environment. The school life experiences showed a number of differences in the way various indicators were related to retention in suburban and rural areas. The days absent, deportment, times late and general school history were important in both areas but were related to retention in different ways depending on the environment. The attitudes toward school, peer groups relationships and influences on the student showed little relationship to high school achievement in either suburban or rural areas.

Summary

The results of the data analysis which compared the differences between suburban graduates and dropouts with the differences between rural graduates and dropouts were presented in this chapter. The findings showed a number of significant differences in the variables related to high school achievement in the suburban areas when compared to the rural areas. Also presented was a discussion of the findings of the differences between the suburban graduates and dropouts when compared to the rural graduates and dropouts. Integrated with the discussion, where appropriate, were supportive references to the literature.

The input comparisons showed a number of differences in the relationship between specific variables and graduating and dropping out in suburban and rural areas. The home environment inputs showed that father's occupation and parental attendance at parent teacher interviews were related to graduating or dropping out in suburban areas but

not in rural areas. In rural areas only mother's education level and regular chores were significant. The student characteristics indicators showed that time spent on homework, evenings spent with friends, television viewing on a weekday and drug use were significantly related to retention in suburban areas but not in rural areas. In rural areas only unusual obstacles, future income expected, the most important characteristic in a job, what the years spent in high school should have given them and alcohol use were significantly related to graduating or dropping out.

The evidence suggests that a number of the differences in the extent of the relationship of certain student characteristics might be related to family and school expectations which appeared to vary according to the suburban or rural environment. The results also showed that future expectations have an important relationship to graduating or dropping out in rural areas while the student's use of free time was an important influence in suburban areas. The findings illustrated that lifestyles were related to graduating or dropping out in both areas but specific indicators varied in their degree of importance according to the type of environment.

The comparisons of the process variables also showed several differences. Mechanics of writing on the achievement tests and geography on the grade nine basic program were significantly related to retention in the suburban areas only while industrial arts was significant in the rural areas only. On the school life experiences measures times late, feelings on leaving school, grades repeated and whether the student was part of the leading crowd were significant in suburban areas. In rural areas deportment in junior high, learning problems, election to a school position, expulsions and what made a student popular were significantly related to graduating or dropping out. The process findings also showed that there was some variation in the degree of importance on some variables most notably in mathematics.

The discussion of the findings on the statistical comparisons between suburban and rural showed that the relationship between graduates and dropouts on all the input and

process clusters was basically the same regardless of the environment. When comparing the inputs the student characteristic inputs showed more differences between suburban and rural than did the home environment inputs. When comparing the process variables the school life experiences showed more differences than the academic performance indicators in the relationship to graduating and dropping out in suburban and rural areas.

Chapter VII

Synthesis of Meanings Derived from the Study

Introduction

A major finding of the Coleman report (1966) on Equal Educational Opportunity was that what schools do has very little relationship to student achievement. This finding resulted in a number of studies designed to shed more light on the problem identified. These studies all have been concerned with either confirming or contradicting the findings of Coleman by uncovering those variables that are most significantly related to student achievement. The interventionist role played by the judiciary in the public school system in the United States in support of the provision of equal educational opportunity in that country has meant that most of these studies have been done in large urban centers of the United States. However, now that Canada has a new constitution with an entrenched Charter of Rights and freedoms the judicial framework in which Canadian education will operate has moved closer to the American tradition with its emphasis on individual rights and equal opportunity. Thus studies on school effects on achievement may have renewed relevancy in Canadian settings.

The studies conducted in the United States attempted to uncover the influences that are most important in affecting educational outcomes. The courts have been interested in knowing how Equal Educational Opportunity is being obstructed by government action or lack of government action. Legal scholars in Canada (Anderson:1984), (MacKay:1986) leave little doubt that Canadian courts will be looking at the conclusions of American Equal Educational Opportunity cases when rendering decisions on similar cases in Canada now that the constitution has been changed. However, there is a fundamental question of whether those conclusions can be applied to the presumably different context found in Canadian schools.

This study was designed to discover which variables were most strongly related to student achievement in a distinctly Canadian context. Unlike the American studies which predominantly used standardized achievement tests as the measure of output, this study used high school completion as the output variable. The literature on student retention and student achievement was reviewed to determine which variables were thought to be related to graduating or dropping out of high school. An attempt was then made to determine those variables most closely associated with students who graduated and with those who dropped out of high school before graduation. These variables once identified could be viewed as influences on student retention and could then augment the information already available on school effects on student achievement.

School Effects and Related Variables

According to the literature on school effects student achievement should be judged against some predetermined goal. For the purpose of studies on student achievement that goal has usually been a standard of performance as judged by standardized achievement tests. Despite the criticism in the literature over their use they have continued to be used widely because of their ready accessibility and the ease with which a variety of statistical techniques can be applied to the results. This study was premised on the idea that the standard for educational achievement should be the level of education that will insure each citizen a certain quality of life. The literature (Forget:1985) points to high school graduation as the minimum threshold to that quality of life in Canada. It is also indicated in the literature (Pallas:1984) that high school retention is an acceptable measure of educational achievement and using it instead of standardized achievement tests does not compromise the educational attainment literature.

A multitude of variables have been used to try and relate educational inputs to educational achievement. There was a general consensus that those input variables

deemed to be most important were family background and student background, especially those related to socioeconomic status. The importance of peer group influence was also generally recognized but there was not a great deal of agreement on what other process variables were most strongly related to educational achievement. Interest in general environmental variables (urban/rural) has been sparse but recent researchers are again considering the importance of the environmental differences internal and external to the school. There was also a realization expressed that variables may vary in the extent of their influences depending on the urban or rural nature of the environment.

Differences as Reflected through Sampling

The study was designed to find which variables were related to student achievement by comparing a group of students who graduated with a group of students who dropped out. A stratified random sample of 74 dropouts and 82 graduates was chosen from the student population enrolled in a selected Nova Scotia school district during the 1985-86 academic year. All 82 of the telephone numbers provided for graduates by the schools were called and this initial contact yielded 55 students who agreed to participate in the study. Since the number of consenting graduates fulfilled the number required in the sample it was decided by the researcher not to pursue any of the 27 graduates who could not be contacted on the first attempt. Forty-eight of the 55 graduates who agreed to participate actually did participate in the study. However, a number of problems were encountered collecting the data for the dropout part of the sample.

Of the 74 dropouts originally selected from the school lists 25 agreed to participate in the study. Despite the fact that each student was called again the night before the first scheduled day of interviews and again each one confirmed that they would keep the appointment none kept the appointment. As a result of this experience and based on the premise that some of these students might not want to return to their former high schools

a different approach was adopted for subsequent contacts. If a student agreed to participate and was employed an attempt was made to have the student complete the questionnaire at their place of employment. If that was not possible a former junior high school or elementary school was suggested close to where the student was living. If neither of the previous two alternatives was possible the questionnaire was delivered to the students residence and picked up within two days. In very rural areas the questionnaire was sent home with a brother or sister and returned completed to the school where it was retrieved by the researcher. These changes increased the response rate to 50% of those students who had accepted appointments and 100% for those questionnaires that were delivered. However, even with the changes in procedures only 18 of the original 74 students actually participated in the study.

As a result of the poor response rate to the original sample another list of 83 dropouts was selected from the district records. Each of these 83 students was called and as a result 19 agreed to participate. Of these 19 students 17 actually did participate. In addition, because a number of dropouts in the initial contact had indicated that they had returned to school it was decided to include representatives from this group in the sample. As a result seven of these students filled out questionnaires at the technical schools they were attending.

The difficulty in obtaining the dropout portion of the sample illustrates a number of problems in collecting data for this type of study. The extremely transient nature and the instability of the dropout population made it very difficult to obtain a truly random sample. Those relatively few dropouts who agreed to participate had to be included regardless of their representativeness. Also considerable time had to be invested to obtain each response (in one case eight trips to the student's place of employment). Obtaining rural dropout responses required a great deal of travel. However, the rural dropouts had more time available and were more willing than the suburban dropouts to be interviewed. This made the travel necessary if an appropriate number of dropouts were to be included

in the personal interview portion of the sample. Figure 7.1 illustrates the contrast in results between graduates and dropouts to the request for participation in the study. Eighty-two telephone numbers of graduates and 156 telephone numbers of dropouts were called to obtain the 48 graduates and 42 dropouts who actually participated in the study.

The differences in the results to the requests for interviews showed that the graduates and dropouts lived two very different types of lives which were displayed in different attitudes and behavior patterns. The graduates tended to have stable home situations, showed positive attitudes toward the researcher and exhibited reliable behavior. The dropouts tended to have an unstable background, appeared somewhat negative when contacted and exhibited unreliable behavior when interviews were arranged. The graduates also showed a better command and use of language compared to the dropouts and were willing to be interviewed at a former school or other suggested locations. Some dropouts had difficulty expressing themselves and many refused to fill out questionnaires or be interviewed if the meeting with the researcher was to take place at their former high schools.

Conceptualization and Meaning of the Study

The input-output studies in education tend to fall into two main categories: those that show that what schools do has very little impact on student achievement, and those that illustrate that what the schools do significantly affects student achievement. Of the former studies the most notable was that of Coleman (1966) which used aggregated data and the most notable of the latter studies was that of Summers and Wolfe (1975) which used disaggregated data. The conclusions reached in both types of studies are not necessarily contradictory, even though they have been viewed as contradictory.

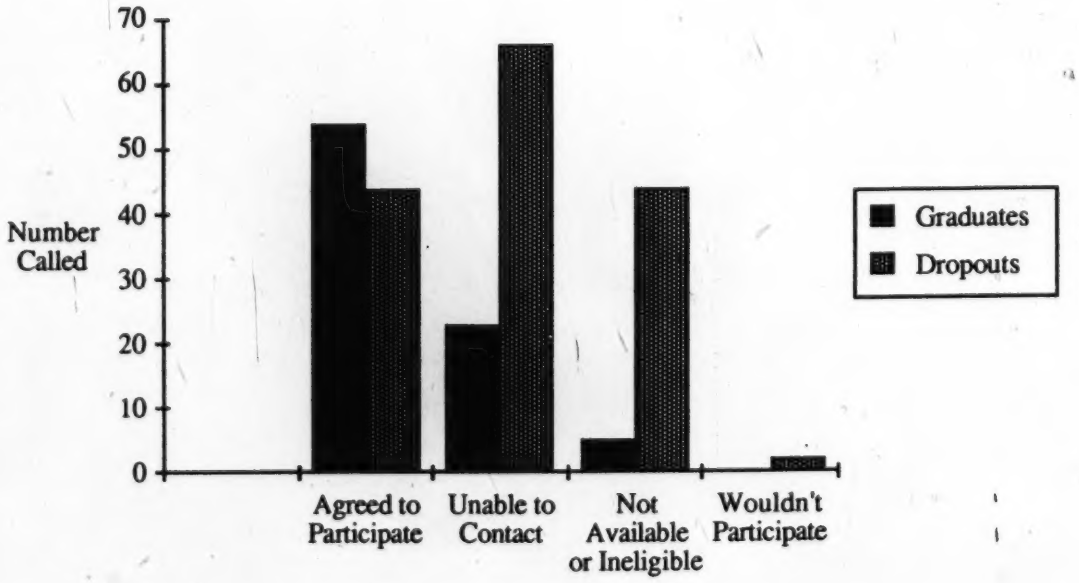

Figure 7.1 Comparison of Graduates and Dropouts on Results of Requests for Participation in Study.

The present study shows that there are both positive and negative influences in the family background, school characteristics, environment, and within each student that interact in unique ways to determine whether or not that student will be successful or fail. This confirms previous research findings. The interaction of those positive and negative influences is illustrated in Figures 7.2 and 7.3. What studies like Coleman (1966) and Summers and Wolfe (1975) showed was that in certain kinds of homes, environments, schools and individuals, certain positive or negative influences tended to be dominant. Aggregated data provided evidence of the conditions that would most likely produce positive or negative influences while disaggregated data showed how those influences interacted to produce achievement in specific cases. In that sense Summers and Wolfe (1975) was a natural evolvement of Coleman (1966). For example, Coleman's aggregated sample of 650,000 students showed that students coming from low socioeconomic areas had little chance for success regardless of the schools they attended. Summers and Wolfe's disaggregated sample of 647 students showed that some students from low socioeconomic areas did succeed and schools were very important in determining those outcomes. Also by implication they showed that not all students from high socioeconomic levels were successful.

Differences Between Graduates and Dropouts

The Process of Graduating or Dropping Out

This study showed that graduating or dropping out is a process that occurs over a period of years. Dropouts tended to have protracted periods of instability or other unusual obstacles in their home backgrounds which were related to their lack of success in school. In addition the attendance and deportment of most of the dropouts deteriorated with each year spent in school. The process variables also confirmed the differences between the two groups on their history of success and failure as well as the effect it had

POSITIVE INFLUENCES

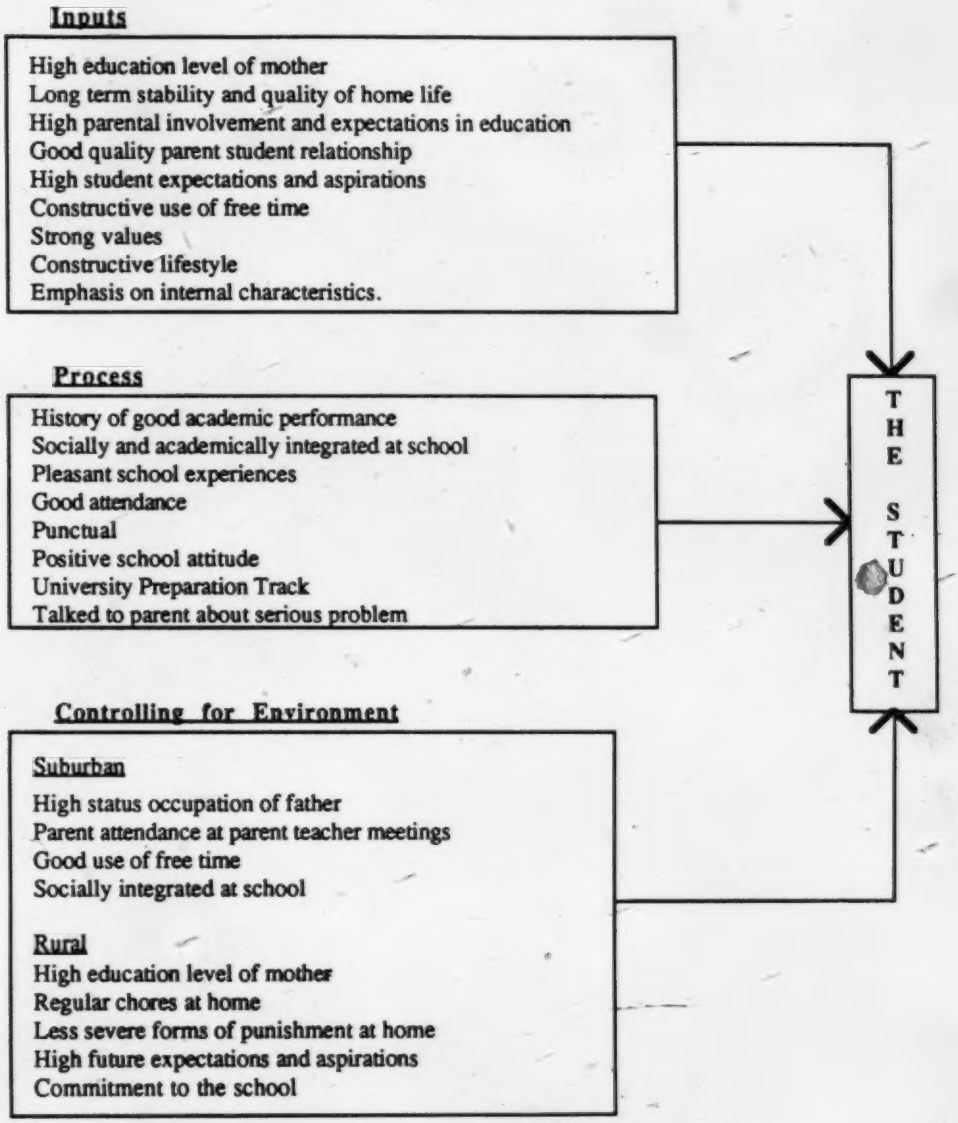

Figure 7.2 Influences Related to Graduating

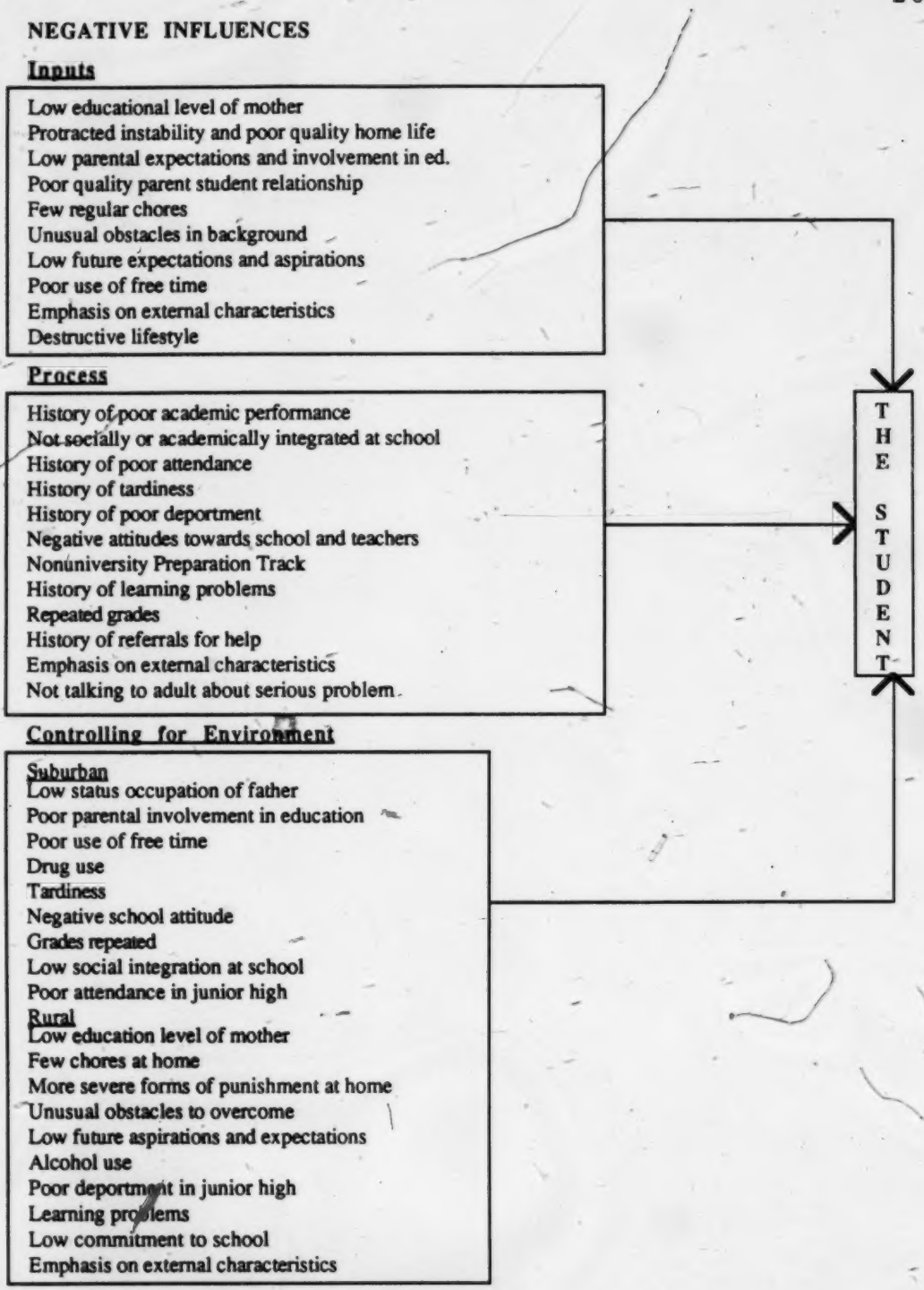

Figure 7.3 Influences Related to Dropping Out

on the pleasantness of their school experiences. The histories showed that graduates tended to become conditioned by success while dropouts became conditioned by failure.

Profile of the Graduate

The findings of this study showed a number of principal characteristics common to the high school graduate. The typical graduate tends to come from a family where the mother has a good formal education, where both parents are actively interested in their children's academic and nonacademic development, have specific expectations for their children's education and consistently provide an atmosphere that will encourage those qualities that are necessary for success in school. Graduates have fewer personal obstacles to overcome to be successful, have high future orientation and expectations and believe their internal characteristics like personality are most important for success. They tend to spend more time on homework, take part in organized activities outside of school and spend fewer evenings with their friends. They also report that they do not use tobacco, alcohol or drugs and tend to have a balanced diet. They have high achievement scores, do well academically, participate in extracurricular activities and have generally satisfactory school experiences. They are seldom absent or late and are rarely in trouble in school. They take predominantly academic courses, do not have any history of learning problems and do not repeat grades. They have a positive attitude towards school and teachers, are integrated academically and socially in school, are emotionally stable and have a positive self image. They also have strong recollections of their early school years and show a good transition from home to school.

Profile of the Dropout

The study findings show a number of characteristics common to the high school dropout. The typical dropout usually comes from a family where the mother does not have much formal education, where only one parent usually the mother shows any

interest in the children's education, where there is little interest in the student's nonacademic development, where there are few specific educational expectations and where there is little effort to encourage qualities necessary for success. Many dropouts tend to have to overcome personal obstacles in order to be successful and they tend to have little future orientation or expectations and they tend to be influenced by external characteristics like good looks. They usually spend little time on homework and most do not take part in organized activities outside school preferring to spend more evenings with their friends. They tend to frequently use tobacco, drugs, and alcohol and have poor diets. Their achievement test scores tend to be low and their academic performance poor. Most do not participate much in extracurricular activities and they usually find school unpleasant. Many have a long and consistent history of poor attendance and their punctuality and deportment usually starts to deteriorate at the junior high school level and further deteriorates at the senior high school level. Most dropouts take predominantly nonacademic courses, have a history of learning problems and have likely repeated grades. They usually have a negative attitude towards school and especially towards teachers and are not integrated academically or socially in school. Most have very weak recollections of their early school years and usually do not make a good transition from home to school.

A Graduate and A Dropout

The descriptions of the graduate and the dropout that follow were constructed from the data on each derived from the questionnaire, their school records, a personal interview with each and the general impressions of the researcher. Both of the names used in the descriptions are fictitious but the descriptions are factual.

Ronnie M. - A Graduate

Ronnie was interviewed in a seminar room of the university in Nova Scotia where he is enrolled as a first year student in the faculty of science. He appeared for the interview neatly attired in a plaid shirt and blue jeans and made himself immediately at ease. He was quite interested in the purpose of the study, made some comments about the questionnaire for clarification and asked several questions prior to the interview about how the study was being conducted and why he was selected. He exuded confidence and was pleasant throughout the interview and became quite animated and witty at several points. He seemed genuinely concerned that he was fully answering any question put to him by the researcher and put considerable effort and thought into his responses. He showed an excellent command of language and was able to communicate his thoughts very well.

Ronnie started school in kindergarten in an urban area and then part way through that first year he moved to a rural area where he remained for the rest of his public school education. Ronnie has two older brothers and one of them lives at home. All three boys graduated from the same high school. He describes his home situation as satisfactory and said his friends were always welcome in his home even if his parents did not approve of them. Ronnie's father has a high school education and presently works as a letter carrier for Canada Post. His mother also went to high school and works outside the home in the personnel department of a bank. Ronnie describes his parents as being supportive but at times he felt they not did really understand his problems. His parents owned their own home and he was provided with access to a car anytime he wanted it. He said his parents watched television more than he did and they also participated in a sport.

Ronnie remembers most of his school years as being very pleasant and has clear memories of all his teachers. He always did well in school academically ("A" average) and had a very positive attitude toward school and his teachers. He said he preferred the sciences in school and wanted to get a broad education from his years in high school. He

described junior high school and senior high school as equally rewarding experiences and attributed much of the credit for his positive experiences to his teachers many of whom he described more like friends than teachers. His only problem in school was frequent tardiness.

Ronnie was a consistent participant in extracurricular activities in both junior and senior high school and was elected to the student council while in senior high school. His free time away from school was spent in tutoring or in different types of organized activities like badminton. He had a steady girl friend while in high school as well as a best friend. He rarely watched television and he also said that he did not use tobacco, drugs, or alcohol although he considered the use of all three to be a major problem at his former high school. He believed that personality was most important in making a student popular at his high school and also felt that he was part of the leading crowd at his school. He felt there were two basic categories of students, those who really wanted to get something out of school and were willing to put in the effort to get it and those who went merely because they had to be there. He counted himself in the former group.

Ronnie's parents had definite educational expectations for him and wanted him to graduate from high school and then go on to a technical school. One parent, his mother attended parent-teacher interviews. He reported having regular chores at home and said the main punishment that occurred when he had done something wrong was a feeling communicated to him by his parents that he had let them down. He said he enjoyed the daily family meal together and described what he felt was "a great atmosphere around the dinner table" and looked forward to it especially when his other brother was home. He said he rarely participated in any leisure activities with his parents and they never helped him with homework because they never really had to. Good report cards were usually played down and poor reports were received with some understanding but with encouragement to improve.

His parents were very negative about his desire to go on to university but became supportive once he made the decision that he was going regardless. Ronnie has very high future aspirations and expectations. He describes his parents as the people who influenced him most but said he would take part in an activity if he thought it was right even if they did not approve. He also said that a friend's disapproval would be harder for him to take compared to his parents or his teachers. He cited his friend as being the positive influence that gave him the extra courage to go to university when he knew his parents did not really approve. Also if he had a serious problem he would sooner talk to his friend than to anyone else.

He was a regular attender at church and said he attended for spiritual reasons as opposed to social reasons or due to parental pressure. He would not pass in an assignment as his own he had not done and would turn in money he found in school. He spent about an hour a day on homework and usually spent two or more evenings with his friends. Ronnie is presently living at home in the rural area where he grew up and commutes daily to the university.

Katherine A. - A Dropout

Katherine A. was interviewed in the vice principal's office at the former elementary school she attended because she said she could not go back to her former high school. She appeared for the interview dressed very casually in blue jeans, runners, a casual top and a winter jacket which she kept on throughout. She sat with her legs crossed and was bent forward clasping her left wrist with her right hand throughout the interview. Her hands often trembled and she spoke with a tremor at various points especially when referring to her home situation. She had difficulty expressing herself on occasion and her written responses on the questionnaire indicate that she has considerable difficulty with written language possibly due to a learning disability and some problem with fine motor

coordination. She left school in October of grade ten at the age of 16 after missing time because of a part time job.

Katherine lives with her parents in a mobile home the family owns which is located in a trailer court. She has four older brothers and one older sister who all graduated from the same high school she attended. Three of the brothers are living at home. Her father attended high school and presently works as a taxi driver. Her mother went as far as junior high school and also works outside the home but is presently unemployed. Katherine describes her parents as willing to help her but she felt they did not really understand her problems. She said her home life was not very satisfactory because of problems between her mother and father which affected her. She also said her friends were not welcome in her home. She rarely participated in leisure activities with her parents and said they spent a lot of time watching television. She had frequent chores at home, never did home work and spent most evenings with her friends or watching television. She said there were no specific expectations as far as her education was concerned and if she received a good report card she was praised but if she did not she felt her parents did not really care. However, she did say that both of her parents attended parent teacher interviews and they probably hoped that she would graduate from high school. She never had access to a car and she said she would take part in a secret activity even if she knew her parents did not approve. She described the most influential person in her life as her brother but she also indicated that he had only attended school so he could sell drugs to other students. She felt that a friend's disapproval would be hardest for her to take compared to her parents or a teacher. She said that she attended church for religious or spiritual reasons but would hand in an assignment as her own done by a friend. In addition, if she found money at her school she said she would have kept it.

Katherine remembered her first day of school as being fairly traumatic because she purposely missed the bus since she did not want to go to school at all. Her school

records indicate that she had a history of poor attendance which really deteriorated in grade seven. Her early memories of school were vague and her first real memory of school was being sent to remedial reading in grade two which she attributed to memory loss caused by an illness in her family. She made a number of references to poor health at various stages of her schooling and blamed much of her early school problems on that. However there is no mention of health problems in her school records. She appeared not to be able to accept very much stress. Her records also indicate that she attended 11 different schools between kindergarten and the time she left in grade ten and seven of those moves occurred while she was in junior high school. She was expelled from at least two of those schools. During the junior high school years she lived for a time with a brother, then a sister and then a boy friend in grade nine before moving back with her parents. She described her school experiences as unsatisfactory but believed her teachers understood her problems and tried to help her with them. She felt the years spent in high school should have given her friends and she said she most preferred vocational type courses. She said she was rarely late for school but was quite happy when she finally left.

She reported that she never took part in extracurricular activities and frequently used tobacco, drugs and alcohol and ate "junk food" daily. She felt she was part of the leading crowd at her school and said she would like to be remembered as the best looking at her former high school. She also thought that being accepted and liked by other students was the most important thing to her while in high school but personality was the most important quality necessary for success. She also had a best friend and a boy friend while in high school.

Katherine had a history of academic difficulty and repeated grade five and failed grade seven and eight. However, it is interesting that she did not repeat either grade in junior high. She said she expects that she was "pushed ahead" because the school authorities knew that she would cease to attend if they made her repeat a grade. She

described the public school system as having low expectations and standards and said "that you could grade without really having to do any work." She claimed that by the time she reached junior high there was little attempt to help her with her difficulties or to bring her up to the level of the other students. She described mathematics as a constant struggle for her. She is presently enrolled in a correspondence course and still hopes to graduate from high school or a technical school. She is also doing some baby sitting while seeking a full time job.

Summary

A review of the data collection procedures, a description of graduating or dropping out as a process, a profile of a graduate and dropout as well as two specific cases were presented in this chapter. This information along with the findings presented in the previous chapters illustrated the completely different lives of graduates and dropouts. Also illustrated were the problems encountered in conducting this type of research due to the characteristics of the dropout population.

The original sample showed that graduates tended to have stable backgrounds, were fairly easy to contact, had positive attitudes and exhibited reliable behavior. Dropouts tended to have unstable backgrounds, were difficult to contact, had generally negative attitudes and displayed unreliable behavior. These observations are consistent with the findings of the study which showed that graduating or dropping out is a process which is related to a number of negative or positive influences which occur over a period of time. These influences come from the environment, the school, the students background and his/her own personal characteristics and interact in each student in unique ways to determine success or failure. Such an assertion is a natural evolvement of input-output studies in education done in the tradition of Coleman (1966) which showed that schools did not matter and Summers and Wolfe (1975) which showed that they did.

The profiles of the graduates and dropouts as well as the specific descriptions of each case illustrated the importance of considering the uniqueness of each student. The examples illustrated that in dropouts a set of negative influences becomes dominant while in graduates a set of positive influences are most influential. The sets of influences could also be unique to each student.

Chapter VIII

Summary, Conclusions, and Implications

Summary of the Study

Background and Purpose of the Study

The purpose of the study was to determine which variables were significantly related to the retention of students in grades ten to twelve. Unlike the American studies that in most cases used standardized achievement tests as the measure of output, this study used senior high school retention as the standard for success.

Justification for the Study

The recent repatriation of the Canadian Constitution with its entrenched Charter of Rights has moved the judicial framework in which Canadian education operates much closer to the American experience. This change to an interventionist role on the part of the Canadian judiciary makes the need for the information gained from input-output studies more immediate. However, the differences in society and culture between Canada and the United States and the rapid changes that have occurred over the last two decades call into question the wisdom of applying the conclusions of prior American studies to Canadian education. This study was an attempt to conduct an input-output study in a distinctly Canadian context using a different measure of output.

In addition to the legal arguments there were other economic and societal reasons for conducting the study. The era of restraint all governments now find themselves in means that there will probably be less money available for education. Educators must be able to maximize the funds they have available while knowing where they will receive the best returns for their spending. Also there is a need to know more about how to reduce a 37% dropout rate in Canada and the strain it puts on national economic resources. Rapid

changes in the family and society also require an examination of how some of these changes might be related to achievement.

Conceptual Framework

The conceptual framework used in the study as it emerged from the review of the literature was developed according to an input-throughput- output model as proposed by Steers (1977). Independent variables were grouped according to inputs, throughputs, and the environment while the dependent variables were classified as outputs. The two types of inputs considered were home environment and student characteristics. The two types of process variables considered were academic performance and school life experiences and the environmental variables were either suburban or rural. The two output variables considered were graduates and dropouts. The choice of specific variables was also grounded in the literature. For example, socioeconomic status and academic performance were selected because of their widely accepted relationship to student achievement.

Research Design and Methodology

The study was an ex post facto study done in the field with a view to theoretical and practical utility. Kerlinger (1973:379) defined ex post facto research as,

> systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables.

A stratified random sample of 90 former high school students was chosen from the 1985-86 senior high school population of the selected Nova Scotia school district. Forty-two students were chosen from the group who left school before graduating and 48 students were chosen from the group that graduated. To insure confidentiality the names

of all students and schools were number coded and students were referred to in the study according to a number or a pseudonym. No addresses, school names, locations or neighborhoods were used in the study. The study was exploratory and descriptive in nature. Permission to conduct the research was obtained from the Director of Personnel from the selected Nova Scotia School District. The research proposal was approved by the Ethics Review Committee of the Department of Educational Administration, University of Alberta.

Both quantitative and qualitative methods were used to collect the data. The quantitative component consisted of a questionnaire completed by each of the students in the sample and an examination of the student's cumulative record card in order to collect personal and academic information. In addition, other school district records were examined where necessary. The qualitative component consisted of a taped semistructured interview with a group of 17 students selected from the sample and interviews with various school district personnel who had been directly connected to the students in the sample. Both the questionnaire and the semistructured interview format were pilot tested in Edmonton prior to the data collection in Nova Scotia.

The questionnaire consisted of 57 closed response items and two open response items. Since the qualitative material was being used to supplement the quantitative data the semistructured interview was constructed to be consistent with the types of questions asked in the questionnaire. The information recorded from the cumulative record card was related to the academic school history, nonacademic school history and vital statistics of each student. Other school district records were examined and members of staff were interviewed to obtain any information necessary for the study that could not be obtained by the other methods.

The students included in the sample were chosen from lists provided by the principals of the seven senior high schools in the district. Each student was sent a letter explaining the purpose of the study and how his/her name was selected. Subsequently

each student was telephoned to enlist his/her participation in the study and as a result 48 graduates and 42 dropouts agreed to participate. Arrangements were made to have the graduates complete the questionnaire in an educational institution or their place of employment. An attempt was made to have the dropouts complete the questionnaire at their place of employment or a former school they had attended. When none of these options were available the questionnaire was delivered to the student's home with a set of instructions and picked up completed by the researcher within two days. Interviews were also conducted at the students' present institution of study or a former school they had attended.

The data that were collected by methods other than the pre-coded questionnaire were coded and recorded on data sheets after which they were keyed punched on computer cards and verified by a qualified key punch operator. The data were then subjected to two statistical techniques to analyze the comparisons between the groups. The chi squared test of significance was used for all discrete variables and the and two tailed t-test was used for all continuous variables.

Summary of the Findings

The summary of the findings of the study are presented in relation to the six research questions considered in the study. The research problems are classified according to input variables, process variables, environmental variables and descriptor variables.

Research problem 1: What were the significant differences in input variables between graduates and dropouts? The first objective of the study was to find which input variables were significantly different between graduates and dropouts. This objective was divided into the following two sub-problems.

Sub-problem 1.1 What were the significant differences in the home environments of graduates and dropouts?

The study findings showed that there were few differences between graduates and dropouts on the four sets of home environment indicators considered. On the socioeconomic inputs only the mother's educational level was related to graduating or dropping out. On the home educational inputs only the parental attendance at parent teacher interviews was related to retention. The nature of the parent student relationship inputs showed a stronger relationship to graduating and dropping out than did the other home environment inputs. None of the parental characteristics inputs were found to be significant. The findings on the comparisons of the interview data showed that the home environment inputs were strongly related to graduating or dropping out. These findings may not be as contradictory as they appear. Embedded in the quantitative material are indications that the home and parental influences are ever present.

Sub-problem 1.2 What were the significant differences in the student characteristics between graduates and dropouts?

The student characteristics inputs showed a stronger relationship to graduating and dropping out than did the home environment inputs. All of the indicators of a student's future expectations and all of the lifestyle variables considered were found to be related to graduating and dropping out. A number of specific variables from the other student characteristics clusters were also found to be significantly related to retention. On the indicators for student values the joining in a secret activity that parents would disapprove, the most important characteristic necessary for success and what the years spent in high school should have given each student were found to be related to graduating and dropping out. The measures of a student's personal characteristics showed the presence of unusual obstacles and the student's present employment status were related to high school achievement. Also the indicators for the use of free time illustrated that the time

spent on homework, the time spent on organized activities, and the number of evenings spent with friends were all found to be related to graduating and dropping out.

The findings on the comparisons of the interview data also showed that the student characteristics indicators were related to graduating and dropping out. Self esteem, emotional stability, and attitude in junior high school were all significantly different. Dropouts were found to have lower self esteem, poorer emotional stability and a more negative attitude toward school in junior high.

Research problem 2: What were the significant differences in process variables between graduates and dropouts? The second objective of the study was to find which process variables were significantly different between graduates and dropouts. This objective was divided into two sub-problems.

Sub-problem 2.1 What were the significant differences in the academic performance between graduates and dropouts?

All of the measures of academic performance were found to be related to graduating or dropping out with the exception of the measure of academic performance in grade nine history. Graduates did better than the dropouts on every academic performance measure considered.

Sub-problem 2.2 What were the significant differences in the school life experiences between graduates and dropouts?

The majority of the school life experience indicators were found to be related to graduating or dropping out. The student's school experiences and the attendance, deportment, and times late were strongly related to graduating and dropping out. On the measures of the student's attitude towards school the attitudes towards teachers and the students feelings on leaving both were related to retention. The general school history, the track of the student, the history of learning problems, the number of grades repeated and the referrals for help were all related to graduating and dropping out. Only the student having a best friend was found to be significantly related to retention among the

measures of peer group influence . To whom the student talked about a serious problem and what made a student popular were found to be related to graduating or dropping out among the indicators for the influences on the student. The comparisons on the interview data revealed that the student's school recollections and the nonacademic school history were related to high school achievement.

Research problem 3: What were the significant differences in input variables between graduates and dropouts in rural and suburban settings? The third objective of the study was to find if there were differences in the input variables that were related to graduating or dropping out in suburban and rural settings. This objective was divided into two sub-problems.

Sub-problem 3.1 What were the significant differences in the home environments of graduates and dropouts in rural and suburban settings?

The study findings showed that there were some differences in the way specific measures of socioeconomic status, home educational environment and the nature of the parent student relationship were related to high school retention in the suburban and rural environments. Father's occupation, and parent attendance at parent teacher interviews were related to graduating or dropping out in suburban areas but not in rural areas. Mother's educational level, regular chores at home, and the forms of punishment used at home were related to graduating or dropping out in rural areas but not in suburban areas.

Sub-problem 3.2 What were the significant differences in the student characteristics of graduates and dropouts in rural and suburban settings?

The study findings showed several important differences in the relationship between various measures of student characteristics and high school retention as a result of a suburban or rural environments. Unusual obstacles, future income expected, the most important characteristic in a job, organized activities, what the years spent in high school should have given them, and alcohol use were related to graduating or dropping out in the rural areas only. Time spent on homework, evenings spent with friends, television

viewing on a weekday, and drug use were related to retention in suburban areas only. These results showed that future expectations were more important for retention in rural areas while the students use of free time was more important in suburban areas. Lifestyles were important in both areas but specific characteristics varied in importance according to the suburban or rural nature of the environment.

Research problem 4: What were the significant differences in process variables between graduates and dropouts in rural and suburban settings? The fourth objective of the study was to find out if there were any differences in the process variables related to graduating and dropping out in suburban and rural settings. This objective was divided into two sub-problems.

Sub-problem 4.1 What were the significant differences in academic performance indicators between graduates and dropouts in rural and suburban settings?

The findings showed that academic performance indicators were related to graduating or dropping out in both suburban and rural areas. On the achievement test scores the only major difference was in mechanics of writing which was related to retention in suburban areas but not in rural areas. However, the scores in mathematics computation and mathematics basic concepts were more important in the suburban areas than in the rural areas. On the measures for the grade nine program the only major differences were in geography which was related to graduating or dropping out in suburban areas only and industrial arts which was related to retention in rural areas only. English and home economics were more important in suburban areas while social studies was more important in rural areas.

Sub-problem 4.2 What were the significant differences in the school life experiences between graduates and dropouts in rural and suburban settings?

The study findings showed a number of important differences in the relationship between school life experiences and graduating or dropping out as a result of a student living in a suburban or rural environment. In the suburban areas only days absent in

junior high, times late, feelings on leaving school, grades repeated, and whether the student felt himself/herself part of the leading crowd all were related to graduating or dropping out. In the rural areas only whether the student was elected to a school position, deportment in junior high, learning problems, expulsions, and what made a student popular were related to graduating or dropping out.

Research problem: 5 What were the best descriptors of students who attained their high school diploma? The fifth objective of the study was to find the best descriptors of those students who graduated. This objective was divided into three sub-problems.

Sub-problem 5.1 What were the best input descriptors of students who graduated?

On the home environment inputs the best descriptors for graduates were the mother's education level, the parental attendance at parent teacher interviews, accessibility to an automobile, attendance at cultural events with parents, regular chores, and participation in leisure activities with parents. The nature of the parent-student relationships were the best group of descriptors of the four groups of home environment descriptors considered.

The mothers of graduates were better educated and both their parents tended to go to parent teacher interviews. Graduates also had greater access to an automobile, attended more cultural events with their parents, participated more in leisure activities with their parents, and tended to have more regular chores at home. The interview data showed that graduates when compared to dropouts had a better quality home life and their parents had higher expectations for them.

Sub-problem 5.2 What were the best process descriptors of students who graduated?

The best process descriptors for graduates included all the academic performance descriptors with the exception of the measures for performance in grade nine history. In addition, the best school life experience descriptors were extracurricular participation, general high school experiences, the most frequent form of punishment in school, the

days absent in junior high, the deportment in junior high, the times late, the attitudes towards teachers, the feelings on leaving school, the track of the student, the history of learning problems, the number of grades repeated, the referrals for help, whether the student had a best friend, what made a student popular, and who the student talked to most about a serious problem.

On the academic performance descriptors the graduates did significantly better than the dropouts on all the achievement tests considered and on all the measures of the grade nine basic program with the exception of grade nine history where the difference was not significant. The school life experience descriptors showed the graduates with better school experiences. They participated more in extracurricular activities, had more pleasant high school experiences, and were subjected to less severe forms of punishment. Graduates were absent less and had better deportment in junior high school and were not often late. They had positive attitudes toward teachers and toward leaving school. Graduates were in the higher track in high school, had no history of learning problems, seldom had repeated grades, and were rarely referred for help. They had a best friend in high school and considered personality to be the most important ingredient for popularity. They also tended to talk to their parents about a serious problem.

Sub-problem 5.3 What were the best environmental descriptors of students who graduated?

The best input descriptors for suburban graduates were father's occupation, parental attendance at parent teacher interviews, the time spent on homework, organized activities, evenings spent with friends, television viewing on a weekday, and the use of drugs. For rural graduates the most important input descriptors were unusual obstacles, future income expected, the most important characteristics necessary in a job, the time spent on organized activities, expectations from their years in high school and use of alcohol. Present employment status, future expectations for education and use of tobacco were important descriptors for graduates in both areas.

The home environment descriptors showed that the suburban graduates had fathers with higher status employment and had parents who both attended parent teacher interviews. The rural graduates had mothers with higher levels of education, they had regular chores at home and were subjected to less severe forms of punishment at home. The student characteristics descriptors showed that the suburban graduates spent more time on homework and organized activities while spending fewer evenings with friends and watching television on weekdays. Suburban graduates also tended not to get involved in drugs. The rural graduates had few unusual obstacles to overcome, expected to achieve a higher future income and valued the enjoyment of their work as the most important characteristic in any future employment. Rural graduates also spent more time on organized activities compared to rural dropouts. Rural graduates had higher educational expectations for their years in high school and were less involved in alcohol.

Research problem 6: What were the best descriptors of the students who dropped out? The sixth objective of the study was to find the best descriptors of those student who dropped out. This objective was divided into 3 sub-problems.

Sub-problem 6.1 What were the best input descriptors of students who dropped out?

On the home environment inputs the best descriptors for dropouts were the mother's education level, the parental attendance at parent teacher interviews, accessibility to an automobile, attendance at cultural events with parents, regular chores, and participation in leisure activities with parents. The nature of the parent-student relationships were the best group of descriptors of the four groups of home environment descriptors considered.

The education level of the mothers of dropouts was lower and usually only the mother attended parent teacher interviews. Dropouts did not tend to have much access to an automobile, did not attend cultural events with their parents, did not participate much in leisure activities with their parents and did not often have regular chores at home.

Sub-problem 6.2 What were the best process descriptors of students who dropped out?

The best process descriptors for dropouts included all the academic performance indicators with the exception of the measure of performance in grade nine history. In addition, the best school life experience descriptors were extracurricular participation, general high school experiences, the most frequent form of punishment in school, the days absent in junior high, the deportment in junior high, the times late, the attitudes towards teachers, the feelings on leaving school, the track of the student, the history of learning problems, the number of grades repeated, the referrals for help, whether the student had a best friend, what made a student popular, and who the student talked to most about a serious problem.

Dropouts did worse than graduates on every measure of the academic performance descriptors. In academic performance in history the difference between dropouts and graduates was not significant. Dropouts did not participate much in extracurricular activities, had unpleasant high school experiences, tended to be punished more severely in school, missed more time, and showed poorer behavior in junior high school. Dropouts were late often, had a negative attitude toward teachers, had negative feelings on leaving school and were usually in the Nonuniversity Preparation Program in high school. Dropouts often had a history of learning problems, had usually repeated grades, and often had been referred for help. They tended not to have a best friend in high school, considered good looks as being necessary for popularity and did not seem to talk to any adult about a serious problem.

Sub-problem 6.3 What were the best environmental descriptors of students who dropped out?

The best input descriptors for suburban dropouts were father's occupation, parental attendance at parent teacher interviews, the time spent on homework, organized activities, evenings spent with friends, television viewing on a weekday, and the use of drugs. For

rural graduates the most important input descriptors were unusual obstacles, future income expected, the most important characteristics necessary in a job, the time spent on organized activities, expectations from their years in high school and use of alcohol.

The father's of suburban dropouts tended to have lower status occupations and usually only their mothers attended parent teacher interviews. Suburban dropouts spent little time on homework, did not take part much in organized activities outside school, and tended to spend more evenings with their friends. The also watched television frequently during the week and were frequently involved in drug use. Rural dropouts often had unusual obstacles to overcome and had lower future aspirations and expectations. They tended to spend little time on organized activities outside school, expected to get vocational training from their years in high school and were frequently involved in alcohol use.

Conclusions

Studies like Coleman (1966) found that the significant influences affecting achievement come mainly from a student's background while Summers and Wolfe (1975) found that what the schools did was very significant. Throughout this study those influences were considered from the framework of an input-output analysis. The following conclusions will be arranged according to conceptualization of the study findings, input, process, and environment and where appropriate will be related to the literature.

Conceptualization of the Study Findings

This study showed that graduating and dropping out appeared to be a process that was the result of the confluence of negative and positive influences that took place over a period of time. Both types of influences came from the environment, the student, and the

school and interacted to produce a negative or a positive outcome. In that sense the study results were consistent with the conclusions of both major divergent groups who have conducted input-output studies as represented by Coleman (1966) and Summers and Wolfe (1975). Like Coleman this study showed that those influences that were related to student achievement came from the external school environment and the student and like Summers and Wolfe it showed that they also came from the school.

Inputs

Home Environment Inputs. Four groups of home environment inputs were considered in the study which included socioeconomic status, home educational environment, parental characteristics, and the nature of parent-student relationships. The quantitative findings showed that the nature of the parent student relationship was more strongly related to graduating or dropping out than the other three groups considered. However, the strength of the relationship between the nature of the parent student relationships and the stronger relationship between the home environment and high school retention illustrated in the interview data indicated that it is probable that there is a strong relationship between the home environment and graduating and dropping out. Such findings would be consistent with the findings of Hanushek (1979), Rock et al. (1985), Bidwell and Kasarda (1980), and Sampson-Malone (1985).

Student Characteristics Inputs. Most of the student characteristics measures were related to graduating or dropping out. Graduates when compared to dropouts had higher aspirations and expectations, made better use of their free time, had stronger more positive values and had a more constructive lifestyle. Dropouts had a tendency to have to overcome unusual obstacles to be successful.

From the study findings on student characteristics it was concluded that in each student there was a convergence of positive and negative influences that determined whether or not that student graduated or dropped out. Those influences that proved to be

dominant depended on the characteristics of each student. For some students the extent of their future expectations might have been the driving force behind their success or failure and dominated any negative influences. For others unusual obstacles might have nullified the effect of a number of positive influences. However, the results also showed that some influences like unusual obstacles might have a multiplier affect and act through other variables to produce the output. This conclusion was consistent with the assertions of Benson (1978), Rosmiller (1987) and others who argued that each student might have his/her own unique education production function.

Process

Academic Performance. The study findings on the academic performance indicators showed that all of the indicators except one were related to graduating or dropping out. Graduates did better than dropouts on every academic performance measure used in the study. It can be concluded from this result that altering the measure of output from achievement tests to high school retention did not appear to subvert the literature on student achievement.

The strong and consistent relationship between academic performance indicators and high school achievement showed the impact of academic success and failure on high school retention. The results that illustrated dropouts did poorly on both achievement tests and the regular school program suggested that ability was an important determinant of educational output. These findings were supported by the findings of Henderson, Miezkowski and Sauvageau (1976), Freidman, Glickman and Utada (1985), McDill, Natriello and Pallas (1985) and were consistent with the findings of Greenfield (1963) and Stewart (1983).

School Life Experiences. The school life experiences indicators also were strongly related to graduating and dropping out. The study results showed that the type of school experiences the student had were related in large measure to whether he/she wanted to

remain at school. This conclusion was supported by the findings of Friesen (1967) and was consistent with the findings of Pallas (1984) and Fraser et al. (1986). The results also showed that the graduates were more socially and academically integrated into the school while the dropouts were not and the dropouts tended to occupy a low status position in the school hierarchy. This in turn was reflected in the different attitudes displayed by the two groups toward school and especially toward teachers. These conclusions were similar to the findings of Strother (1986) and were consistent with the findings of Wyse (1987). The results which showed that success or failure was a long term process that went back to the earliest years in school was supported by the findings of Barth (1984) and Wyse (1987).

The Environment

The basic relationships between graduates and dropouts were the same when the suburban graduates and dropouts were compared to the rural graduates and dropouts. However, the comparisons showed some important differences in the strength of the relationship that specific variables had to retention.

The comparisons on the home environment indicators showed that in the rural areas the relationship of the parents to retention was more indirect acting through variables like mother's education level and student's expectations. In suburban areas the parental relationship was more direct acting through variables like the student's use of free time. The relationship of student lifestyles in both areas was important with graduates having constructive lifestyles while dropouts had destructive lifestyles. The differences in the specific kinds of constructive and destructive activity varied according to the environment and showed that simply altering the rural or suburban nature of the environment without changing some of the other influences was not likely to alter success or failure.

The comparisons of the process variables on the basis of suburban and rural showed that the relationship of these influences was important regardless of the

environment. However, the results on the achievement tests and academic performance indicators showed there were different characteristics common to suburban and rural schools which showed that rural schools may be less effective. This conclusion was consistent with the arguments of Bidwell and Kasarda (1975) that environmental conditions affected achievement through the effects on the school district structure and staff composition. Also the school life experiences showed that students had different kinds of school experiences as a result of living in suburban or rural areas but the types of experiences of graduates compared to dropouts were relatively the same regardless of the environment. This conclusion was consistent with the findings of Freisen (1967), Pallas (1984), and Fraser et al. (1986).

Implications

Theory

The findings of this study indicated that the nature of the parent student relationship was the the most important group of the four groups of home environment indicators considered. This finding is not consistent with most of the literature which shows socioeconomic status to have the strongest affect. Part of the reason for the difference might be explained by problems with the sample. However, the relatively weak relationship of socioeconomic status, parental characteristics, and home educational environment may be due in part to the differences between the societal characteristics of the area studied and the societal characteristics of the majority of studies in the literature which were done in major urban centers in the United States. This study illustrated that various aspects of the home environment are not fixed in their degree of importance and may vary in importance depending on the area studied. Some of the findings of many of the American studies may therefore not be applicable to Canada.

The study findings also showed that the student characteristics inputs showed the most consistent differences between graduates and dropouts of the two major input groups considered. Also the academic performance processes showed the strongest relationship to high school retention and the school life experiences showed the importance of the student having pleasant experiences in school if he/she is to remain. These three major groups had the strongest relationship to achievement in this study and all three groups are to some extent within the control of the school. It would therefore appear that there is much that schools can do to affect high school achievement.

The study findings on the comparisons between graduates and dropouts in suburban areas compared to graduates and dropouts in rural areas showed that the relationship of graduates to dropouts was the same on the four major types of influences that were considered. However, the extent of the relationship to high school retention of specific indicators varied according to the suburban or rural nature of the environment. Schools must therefore discover which influences are most important in their area and which ones they most likely will be able to change. Also there is a danger in applying the results of urban or suburban studies to rural areas and vice versa.

Practice

The study findings showed that there were only two of the significant home environment indicators over which the school had some control. These were the mothers influence and the parents attendance at parent teacher interviews. Schools should therefore facilitate contact between the mothers of the students and the school and set up parent teacher interviews in a way that will encourage the attendance of both parents. The school should also be attempting to foster the right kind of parent student relationship necessary for the student's success in school.

The findings on the student characteristics indicators show that the school administrator must put increased emphasis on raising expectations and being sensitive to

unusual obstacles in a student's background. The school must also be willing to work closely with the home to insure the proper structures, values, and relationships are in place to insure success. This implies developing innovative ways to establish the proper kind of relationship with the home and the school.

The findings on the academic performance and school life experiences processes shows the important relationship between the school and success or failure. The academic performance results showed that ability has a lot to do with poor academic performance which in turn leads to unpleasant school experiences. The results also showed that school administrators must raise expectations and the quality of instruction while providing the structure and programs that are necessary to bring at risk students up to a level where they will feel some success. This must be done in a manner that does not label students in a way that makes them feel inferior to their peers. Such programs should be present at all levels of schooling and repetition of grades and tracking should be used as little as possible.

The findings also have some important implications for the suburban and rural school administrator. The study shows that the same major influences were related to achievement in both areas but the ways those major influences were related to retention varied according to the environment. Administrators therefore must determine which influences are most important for their areas so they can channel their efforts to produce the most positive outcomes for their students.

Future Research

The study showed that positive and negative influences converge in each student over time to determine educational output. For the graduates the dominant influences are positive while for the dropout the dominant forces are negative. More needs to be known about how these major influences interact in each individual to determine educational outcomes.

The findings in this study showed that those influences that had the strongest and most consistent relationship were within the power of the schools to alter. Also the way these influences were related to retention varied according to the environment. These results have some important implications for future research on student achievement. More research needs to be conducted so individual schools can determine which influences are most important for them along with ways to determine how individual schools might affect those influences in positive ways.

The findings also indicated that the conclusions of the major American studies must be applied cautiously to the Canadian situation. In addition, the results showed the need for more Canadian research of this type in a number of different communities so the results may be compared.

The study also illustrated that some of the influences were related differently to retention in suburban areas when contrasted with rural areas. More research needs to be conducted which compares suburban and rural students as well as urban and rural students to uncover the reasons why these influences work differently in different environments. In addition, the study showed that there may be major differences between suburban and rural schools which affect achievement. More research needs to be conducted to uncover these differences and the way they influence high school retention so all schools might benefit.

The study findings also illustrated that it is necessary to increase expectations to be able to positively influence achievement. However, other findings in the study also indicated that many at risk students drop out of school because they cannot meet present expectations. More research needs to be done to determine how expectations can be increased without increasing the dropout problem. The need for this research is more urgent considering the present reform movement in education which wants to raise both standards and expectations.

Finally the results clearly indicate that where a student lives is a great determinant of the quality of education he/she is going to receive. Given the new constitutional framework in which Canadian education must operate there are some important legal and financial ramifications for all three levels of government as well as school boards which need further examination and investigation.

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APPENDICES

APPENDIX 1

CORRESPONDENCE:

LETTER TO SCHOOL DISTRICT, LETTER TO PRINCIPALS, FOLLOW UP LETTER TO PRINCIPALS AND LETTER TO STUDENTS

Terrence S. Sullivan
521P Michener Park,
Edmonton, Alberta
T6H 4M5
May 16, 1986

Dear

Enclosed please find a copy of a mini proposal for my dissertation. I should stress that this is only a rough draft in a very preliminary form. Should the necessary approvals be granted I would then proceed to develop the actual proposal which would be and be completed sometime in late September.

In deciding upon a topic there were two main considerations. First I wanted to develop a study that would have some value to district and secondly would maintain my interest and enthusiasm over the monthes necessary to complete the study. I feel the enclosed proposal will be attractive because it will provide (a) information of immediate utility for the administrator at the school level (b) information of immediate utility at the district level and (c) information useful for future planning at both levels.

To be able to proceed further I would need permission to obtain the graduation class lists from . senior high schools along with a list of students who have dropped out in each school during the present academic year. More importantly I would need permission to access the information in the cumulative records these students so I could select my sample. Should this approval be granted I would then send out a letter to each student selected, followed by a telephone call, explaining the purpose of the study and asking for their participation and cooperation. Subsequent to this the proposal would have to be submitted to the University of Alberta for their approval. Since expressed an interest in the topic I might choose I have taken the liberty of forwarding a copy of this draft to him as well.

In closing I would request the necessary permission to proceed with the development of the enclosed proposal. Your advice and comments would also be greatly appreciated.

Best regards,

Terry

Terrence S. Sullivan

cc.

«DATA Correspondence #1 data»

Terrence S. Sullivan
521P Michener Park,
Edmonton, Alberta
T6H 4M5
June 23, 1986

«fullname»
«position»«school»«address»«postal code»

Dear «name»

I have just received approval from the board office to conduct a study next year. The study will be an attempt to determine those variables that are most significant in affecting student achievement in

To be able to conduct the study I need to select a random sample of successful and unsuccessful students. I would like to take the successful group from those students who receive their senior matriculation this month. The unsuccessful group would be selected from the population of students who dropped out of school since September. By looking at characteristics within each group and then characterictics between the two groups I hope to derive some useful conclusions concerning student achievement in

Could you be kind enough to forward to me a list of your graduates for this year along with a list of those students who have dropped out. I know that this is just what you need at this time of year, another demand on your time but I would really appreciate your assistance. I must set up the structure for the study over the Summer and can't do so without the sample.

Thanks again for your help. I hope you have a pleasant break.

Best regards,

Terrence S. Sullivan

cc.

«DATA Principals #2 data»
Terrence S. Sullivan
521P Michener Park,
Edmonton, Alberta
T6H 4M5
September 8, 1986

«fullname»
«position»«school»«address»«postal code»

Dear «name»

In June of this year I received approval to conduct a study in concerning those variables that are most significant in affecting student achievement. I immediately wrote the senior high school principals to request their cooperation. Unfortunately some of the letters did not arrive until after the school year had ended. As a result the data is incomplete and I am not able to proceed with the study until all the senior high schools have responded.

The study will be an attempt to determine those variables that are most signifcant in affecting educational achievement in It will involve eighty former senior high school students from One group will be selected from the grade twelve students who received their senior matriculation in June of 1986. Another group will be selected from those senior high students who dropped out during the 1985-1986 academic year.

To be able to complete the sample I need your assistance. Could you please send to me a list of your grade twelve graduates along with a list of those students in grades ten to twelve who dropped out during the past year? I will then forward to you the names selected from your school. I would like to drop by in early November, to review the cum cards of those students selected prior to my interviewing them.

I have deposited a copy of the proposed study with If you have any questions regarding the study I would be pleased to answer them.

Thank you for your attention. Your assistance in facilitating this project would be very greatly appreciated.

Yours truly

Terrence S. Sullivan

cc.

University of Alberta
Edmonton
Canada T6G 2G5

Department of Educational Administration
Faculty of Education
7-104 Education Building North, Telephone (403) 432-5241

«Data Student Letter #1 data»
October 22, 1986

«fullname»«address»«postal code»

Dear «name»

During the month of November I will be conducting a study of former students of the School System. Your name has been selected from among those students who attended high schools in during the 1985-86 academic year.

I am gathering information on high school students' backgrounds, values, and school experiences. Early in November I will be telephoning you to request your participation. This would involve your filling out a brief questionnaire. I can assure you that any information obtained will be treated in a confidential manner.

It is hoped that this study will provide insights which will be beneficial to future students in Your experiences would be a valuable addition to this endeavor.

I look forward to speaking to you in November and obtaining your consent to participate.

Terrence S. Sullivan

Department of Educational Administration
University of Alberta

APPENDIX 2

LIST OF VARIABLE GROUPS USED IN STUDY

Variables Derived from the Literature

Inputs

Home Environment
- Socioeconomic Status
- Home Educational Environment
- Parental Characteristics
- The Nature of Parent-Student Relationships

Student Characteristics
- Personal Characteristics
- Future Expectations
- Use of Free Time Outside School
- Values
- Lifestyles

Process

Academic Performance
- Achievement Test Results
- Grade IX Program

School Life Experiences
- Attendance, Deportment and Times Late
- Student Attitudes toward School
- General School History
- Peer Group Relationships
- Influences on the Student

Environment

Suburban
- Inputs
- Process

Rural
- Inputs
- Process

APPENDIX 3

STUDY INSTRUMENTS:

QUESTIONNAIRE, TABULATION SHEETS AND SEMI-STRUCTURED INTERVIEW FORMAT

High School Personal Inventory

Thank you for agreeing to complete this questionnaire.

Instructions

Please circle only one number for each question. Read and answer each question carefully. If you do not understand somthing be sure to ask for assistance. Remember there are no rignt or wrong answers. What is most important is your recollection of your life in high school. You are asked not to identify yourself. All information collected will be treated with strictest confidence. If you feel there is a question that is particularly offensive you have the right not to respond. However, I would appreciate your trying to answer every question.

PLEASE USE A COLOR OTHER THAN BLACK
WHEN COMPLETING THIS QUESTIONNAIRE

CODE
...1

SC_____ 1-4

HSC_____ 5

High School Personal Inventory

Please circle the number that best describes your situation in high school. Please do not write here

1. How many brothers and sisters did you have living at home?
1. none
2. one
3. two
4. three
5. four or more

6

2. How often did you have the use of a car while in High school?
1. whenever I wanted
2. a few times a week
3. hardly ever
4. never

7

3. Was there a person of the opposite sex with whom you went out regularly, or with whom you went steady?
1. yes
2. no

8

4. Which one of these items was most important in making a student popular in the high school you attended?
1. having a nice car
2. high grades, honor roll
3. being an athletic star
4. good looks
5. nice clothes
6. personality

9

5. What is the highest level of your father's education?
1. no formal education
2. elementary
3. junior high
4. high school
5. vocational school or technical school
6. some university
7. university degree

10

6. Which item below fits your parents most accurately?
1. they understood the problems of teen-agers and assisted them
2. they were not interested in teen-agers
3. they seemed willing to help but didn't understand the problems of teen-agers

11

Do not write here

7. In how many organized activities did you participate apart from those at school? (i.e. music lessons, swimming instruction, hockey, art, dancing etc.)
   1. none
   2. one or two
   3. three
   4. four or more

12

8. In how many extracurricular activities did you participate while in high school? (i.e. intramurals, clubs, student council, etc.)
   1. none
   2. one
   3. two
   4. three
   5. four or more

13

9. What is the highest level of your mother's education?
   1. no formal education
   2. elementary
   3. junior high
   4. high school
   5. vocational school or technical school
   6. some university
   7. university degree

14

10. Were you elected to any school position while in high school?
    1. yes
    2. no

15

11. Did you earn any money by working outside the home while attending high school? (not counting summer work)
    1. yes
    2. no

16

12. Did you smoke cigarettes?
    1. yes, regularly
    2. yes, occasionally
    3. no

17

13. Please state your father's occupation. If unemployed write unemployed and then the job he usually did when working.

    _____

18

14. Would you say that you were part of the leading crowd in your school?
    1. yes
    2. no

19

15. If your friends asked you to join in a secret activity would you join them if you knew your parents would not approve?
    1. yes
    2. no

20

16. Please check Y for yes or N for no for each of the following.

When you were in high school;	Y	N	Do not write here
1. Did your family own a car?			21
2. Did your family have a garage/carport?			22
3. Was there a writing desk in your home?			23
4. Did your family own a stereo?			24
5. Did your family own an automatic washer?			25
6. Did your family own an electric stove?			26
7. Did your family own an electric clothes dryer?			27
8. Did your family own a micro wave oven?			28
9. Did you have hot and cold running water in your house?			29
10. Did your family own a VCR?			30
11. Did your family own a computer?			31
12. Did your family own a musical instrument?			32
13. Did your family get a daily newspaper?			33
14. Did you have your own room at home?			34
15. Did your family own its own home?			35
16. Did your family own a dishwasher?			36
17. Was there a set of encyclopedias in your home?			37
18. Did your family own more than 100 books?			38
19. Did your parents borrow any library books last year?			39
20. Did your family leave the community each year for a vacation?			40
21. Did you belong to any club where you had to pay fees?			41
22. Did your mother belong to any educational, art or social organizations?			42
23. Did your family own a color TV set?			43
24. Did your family own a summer home?			44
25. Did you have a curfew when you were in high school?			45
26. Did you receive a regular allowance?			46
27. Were your friends welcome at your home?			47
28. Were you read to as a child?			48

Do not write here

17. What is the highest level of education you expect to have attained ten years from now?
    1. not finished high school
    2. high school graduate, vocational school graduate or technical school graduate
    3. some university
    4. university degree, i.e., B.A., B.Ed., B.Sc.
    5. professional degree, e.g., doctor, lawyer, Ph.D.

49

18. Which one of these things would have been hardest for you to take?
    1. parents' disapproval
    2. teacher's disapproval
    3. friend's disapproval

50

19. Which statement best describes your family situation while in high school?
    1. living with both natural parents
    2. living with natural mother and step father
    3. living with natural father and step mother
    4. living with mother only
    5. living with father only
    6. living with mother and her common law partner
    7. living with father and his common law partner
    8. living with adoptive parents
    9. living with relative or legal guardian
    10. living on my own

51,52

20. Who influenced you most in your life?
    1. parents
    2. teachers
    3. clergy
    4. friends
    5. if other please specify _____

53

21. Which best describes your attitude towards church?
    1. I go for social reasons
    2. I go for religious or spiritual reasons
    3. I go due to parental pressure
    4. I don't attend

54

22. Would you have handed in as your own an assignment that a friend had done for you?
    1. yes
    2. no

55

23. What would you most like to be remembered for at the high school you attended?
    1. outstanding student
    2. athletic star
    3. most popular
    4. if other please specify _____

56

24. Did you drink alcoholic beverages?
    1. yes, frequently
    2. yes, occasionally
    3. no

57

Do not write here

25. What yearly income do you expect to make ten years from now? 58
    1. $5,000 to $10,000
    2. $10,000 to $20,000
    3. $20,000 to $30,000
    4. more than $30,000

26. Among the things you strived for during your high school days, which of the following was most important to you? 59
    1. pleasing your parents
    2. learning as much as possible in school
    3. living up to your religious ideals
    4. being accepted and liked by other students
    5. pleasing the teacher

27. Which of the following would be most important to you in a job? 60
    1. the security of a steady job
    2. the opportunity for rapid promotion
    3. the enjoyment of the work itself
    4. a high income

28. How many evenings a week did you spend with your friends? 61
    1. none
    2. one
    3. two
    4. more than two

29. Please state your mother' occupation if she worked outside the home. 62

    _____

30. In your adult life whom would you like to resemble most? 63
    1. one of your parents
    2. your favorite teacher
    3. a relative
    4. a friend
    5. a celebrity
    6. no one but yourself

31. How much time did you spend doing homework outside school time on a weekday? 64
    1. none or almost none
    2. less than an hour
    3. one or two hours
    4. between two and three hours
    5. three or more hours

32. Which one of the following do you think is the most important characteristic necessary for success in life? 65
    1. money
    2. athletics
    3. personality
    4. academic achievement
    5. friendliness

Do not write here

33. Which item below best describes most of the teachers at your high school?
    1. they understood the problems of teen-agers and assisted them
    2. they were not interested in teen-agers
    3. they seemed willing to help but didn't understand the problems of teen-agers

66

34. About how much time, on the average, did you spend watching TV <u>on a weekday?</u>
    1. none or almost none
    2. less than an hour a day
    3. one to two hours
    4. between two and three hours
    5. three or more hours a day

67

35. Would you say that you had a relatively happy life at home?
    1. yes
    2. no

68

36. Would you say that your school experiences were fairly satisfactory?
    1. yes
    2. no

69

37. What should the years spent in high school have given you?
    1. broad education
    2. training for a vocation
    3. preparation for citizenship
    4. knowledge of how to get along with people
    5. friends
    6. if other please specify _____

70

38. If you had found a $10 bill in school what would you have done?
    1. reported the find
    2. kept the money

71

39. Which of the following subjects did you like best in school?
    1. mathematics
    2. sciences
    3. English
    4. social studies
    5. physical education
    6. vocational courses

72

40. Did your father or mother participate in any type of sport?
    1. yes
    2. no

73

41. Did your parents watch television?
    1. more than you
    2. as much as you
    3. less than you

74

---2

42. The major problems in your school were related to 1 -4
    1. lack of opportunity to participate
    2. lack of school spirit
    3. lack of necessary facilities 5
    4. cliques or groups
    5. other (please specify)_____

43. Did your parents attend parent teacher interviews when you were in elementary, junior high, or senior high school?
    1. both parents
    2. one parent 6
    3. neither parent

44. How many times a week did you eat fast food or "junk" food?
    1. daily
    2. occasionally 7
    3. not at all

45. Did you have a best friend in high school?
    1. yes 8
    2. no

46. Which best describes the languages spoken at home?
    1. English
    2. English or French
    3. English and another language 9
    4. another language

47. How did you feel on leaving high school?
    1. happy
    2. angry
    3. bitter 10
    4. relieved
    5. frustrated
    6. afraid
    7. indifferent

48. Were you late for school
    1. often
    2. occasionally 11
    3. hardly ever
    4. never

49. Which best describes the <u>most frequent</u> form of punishment used at home?
    1. sent to your room
    2. physical punishment
    3. grounding 12
    4. a lecture
    5. if other please specify _____

Do not write here

50. Which best describes the most frequent form of punishment used at school?
    1. detention
    2. physical punishment
    3. suspension
    4. complaint to parents by the school
    5. a lecture
    6. if other please specify _____

13

51. Did you ever try drugs while in high school?
    1. yes, occasionally
    2. yes, frequently
    3. no, not at all

14

52. Did you have one meal together as a family at least once a day?
    1. yes
    2. no

15

53. Did you have regular chores at home?
    1. frequently
    2. occasionally
    3. rarely
    4. never

16

54. Did your parents help you with homework?
    1. frequently
    2. occasionally
    3. rarely
    4. never

17

55. Did you attend cultural events with your parents? (i.e. like symphonies, the ballet, live theatre etc.)
    1. frequently
    2. occasionally
    3. rarely
    4. never

18

56. Did you participate in leisure activities with your parents? (i.e. fishing, bowling, sports events, games (i.e.cards, trivial pursuit, monopoly, chess, checkers etc.)
    1. frequently
    2. occasionally
    3. rarely
    4. never

19

57. If you had a serious problem to whom did you talk about it?
    1. a parent
    2. a friend
    3. a teacher at school
    4. some other adult
    5. nobody
    6. if other please specify _____

20

Do not write here

58. How did your parents react to a poor report card if you had one?
    1. disappointment
    2. anger
    3. with understanding
    4. they did not really care

21

59. How did your parents react to a good report card if you had one?
    1. you were praised
    2. they played it down
    3. they did not really care

22

SC___
HSC___

Student Background Variables

Sex ___

Ability Score _____ **Test Name**_____

Date of Birth(d/m/y) _____

Attendance(Final Year)

	Days Present	Days Absent
Elementary	_____	_____
Junior High	_____	_____
Senior High	_____	_____

Deportment (1=Excellent , 7=Poor)

Elementary	1 2 3 4 5 6 7
Junior High	1 2 3 4 5 6 7
Senior High	1 2 3 4 5 6 7

Health Record (1=Excellent , 7=Poor)

Elementary	1 2 3 4 5 6 7
Junior High	1 2 3 4 5 6 7
Senior High	1 2 3 4 5 6 7

High School Program U. P.____ N.U.P____

Achievement Tests Results (Grade 9) **Test Name**_____

		School Av.	System Av.	Prov. Av.
English	___	___	___	___
Mathematics	___	___	___	___
History	___	___	___	___
Geography	___	___	___	___
Science	___	___	___	___
_____	___	___	___	___
_____	___	___	___	___
Composite Score	___	___	___	___

Academic Record

Elementary (Grade Six Final)

Reading	____
Mathematics	____
Science	____
Social Studies	____
French	____
Art	____
Music	____
Phys. Ed.	____
Music	____

Junior High(Grade Nine Final

English	____
Mathematics	____
Science	____
Geography	____
History	____
French	____
Art.	____
Phys. Ed.	____
Music	____
Ind. Arts	____

Senior High

	Grade 10	Grade 11	Grade 12
English	____	____	____
Mathematics	____	____	____
History	____	____	____
Geography	____	____	____
Physics	____	____	____
Chemistry	____	____	____
Biology	____	____	____
Computer Science	____	____	____
Art	____	____	____
Home Ec	____	____	____

Other Subjects

--------	____	____	____
--------	____	____	____
--------	____	____	____
--------	____	____	____
--------	____	____	____

Notes

Semi Structured Interview Format

Student Number
High School Code
Date
Place
Time

Introduction

The purpose of the interview will be reviewed and the subject will be reminded that everything that is said will be kept strictly confidential. Students will also be assured that in the write up of the study they will only be referred to by a code number or fictitious name.

Each interview will be one hour in duration. It will expand and supplement the responses given in the questionnaire. The interview will explore further the three main categories of input variables, process variables and background variables.

School Life

An attempt will be made to make the students feel comfortable by asking them a little bit about themselves, i. e. where they were born, how old they are, where they started school and so on.

The subjects will then be taken through each grade attended in school. They will be asked to recall what they can about each year starting with their first year of kindergarten and progressing to the point at which they left school or graduated. They will also be asked to comment generally on their school life at each stage of their

education. (i.e. elementary, junior high and senior high.)

Of special interest will be how they related to teachers and other students, whether they ever got in trouble, what they liked most at each stage and what they liked least, how they did academically, and so on. As well, they will be asked what was most difficult about high school for them and what made them decide to leave early or remain until graduation? Their expectations about what they wanted to get out of high school and their parents feelings about their leaving or graduating will also be areas of enquiry.

Home Life

Next the students will be asked to talk about their home life beginning with the number of brothers and sisters they have along with a description of each. They will be asked about their general level of satisfaction with their life at home and about their parents and how they got along with them. The parental attitudes towards school will be explored as will the different forms of family recreation.

Background Characteristics

Subjects will be asked to describe what they did for recreation while in high school and to discuss some of the people they most associated with in their free time. They will also be requested to describe the recreational patterns of other students in the school. They will be asked how they

spent their time out of school and what they worried about most at that time in their lives? They will be questioned about their future aspirations.

Field Notes

Descriptions of each student and supplementary field notes will be dictated immediately after each interview. The interview might not follow exactly or sequentially the structure that has been laid out. An attempt will be made to focus the content in the three variable categories but the way the material is elicited will be determined in great measure by the subject being interviewed.

APPENDIX 4

THE GOUGH HOME INDEX

AND

THE DUNCAN SOCIOECONOMIC INDEX FOR ALL OCCUPATIONS

The Gough Home Index

1. Did your family own a car?
2. Did your family have a garage/carport?
3. Was there a desk in your home?
4. Did your family own a stereo?
5. Did your family own an automatic washer?
6. Did your family own an electric stove?
7. Did your family own an electric dryer?
8. Did your family own a micro wave oven?
9. Did you have hot and cold running water in your house?
10. Did your family own a VCR?
11. Did your family own a computer?
12. Did your family own a musical instrument?
13. Did your family get a daily newspaper?
14. Did you have your own room at home?
15. Did your family own its own home?
16. Did your family own a dishwasher?
17. Was there a set of encyclopedias in your home?
18. Did your family own more than 100 books?
19. Did your parents borrow any library books last year?
20. Did your family leave the community each year for a vacation?
21. Did you belong to any club where you had to pay fees?
22. Did your mother belong to any educational, art or social organizations?
23. Did your family own a color TV set?
24. Did your family own a summer home?

The Duncan Socioeconomic Index For All Occupations

1. Unskilled laborer, farm laborer, domestic worker, seaman, taxi driver, etc.
2. Skilled worker, policeman, mailman, small farm owner, inshore fisherman, owner of small business, secretary
3. Physician, lawyer, architect, etc.
4. Banker, university professor, engineer, etc.
5. Owner of medium size farm, clerk, foreman, salesman, deep sea fisherman etc.
6. School teacher, other profession, official, owner of a large farm, retail merchant, owner of large fishing vessel, officer, etc
7. Semi-skilled worker, truck driver, miner, factory worker, woodsman, lab assistant, fish plant worker, telephone operator, sales clerk